

# KV-C2553E/C2953E

## RM-816

## SERVICE MANUAL

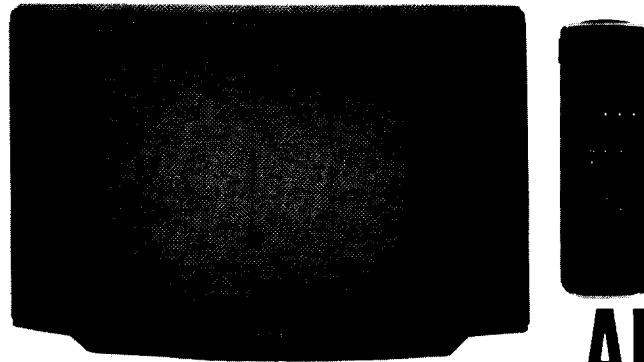
*Spanish Model*

KV-C2553E

Chassis No. SCC-E22E-A

KV-C2953E

Chassis No. SCC-E22H-A



## AE-1C CHASSIS

### MODELS OF THE SAME SERIES

KV-C2553E/C2953E

KV-A2113E/A2513E

KV-E2523E/E2923E

### SPECIFICATIONS

【KV-C2553E/C2953E】

Television system

B/G/H

Color system

PAL, SECAM, NTSC3.58, NTSC4.43

Stereo system

GERMAN /NICAM stereo

Channel coverage

VHF: E2-E12 UHF: E21-E69

CABLE TV (1) : S1-S41

CABLE TV (2) : S01-S05, M1-M10, U1-U10

Picture tube

Black Trinitron tube

Approx. 63.5 cm (25 inches)

(Approx. 59 cm picture measured diagonally)

110° -degree deflection

Approx. 72.4 cm (29 inches)

(Approx. 68 cm picture measured diagonally)

110° -degree deflection

Inputs

1 21-pin connector:

CENELEC standard including RGB input.

2 21-pin connector:

including S video input

Flont : Audio and video input jacks:

phono jack.

Including S Video input

Y: 1Vp-p±3dB 75ohm

C: 0.3Vp-p±3dB 75ohm

Outputs

21-pin connector: CENELEC standard

Headphones jack: stereo minijack

External speaker terminals: 2-pin DIN

Audio output jacks: phono jack (output dependent upon TV settings)

30 W + 30 W

97Wh (KV-C2553E)

107Wh (KV-C2953E)

Sound output

Power consumption

Dimensions incl.speakers

Weight incl.speakers

Approx. 769×495×478 mm (w/h/d) (KV-C2553E)

Approx. 854×555×510 mm (w/h/d) (KV-C2953E)

Approx. 38kg (KV-C2553E)

Approx. 52kg (KV-C2953E)

-Continued on next page-



# TRINITRON® COLOR TV

# SONY®

## [RM-816]

Remote control system  
Power requirements

infrared control  
3V dc  
2 batteries IEC designation  
R6 (size AA)

Dimensions

Approx. 75×221×23mm(w/h/d)

Weight

Approx. 230g (including batters)

Accessories supplied

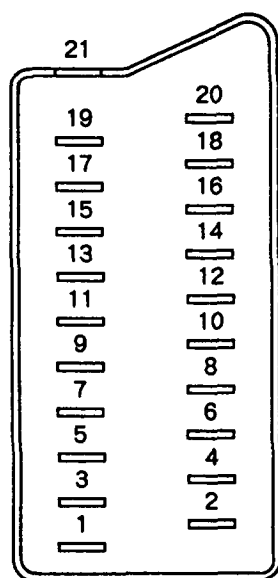
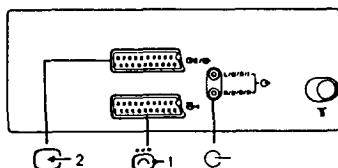
IEC designation R6 batteries (2)

Supplied accessories

RM-816 Remote Commander (1)  
IEC designation R6 batteries (2)

Design and specifications are subject to change without notice.

21 pin connector (①, ②)



Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
2	○	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
3	○	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
7	○	●	Blue input	0.7V±3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5–12 V): Part mode Low state (0–2 V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2 nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal: 0.7V±3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	○	Red input	0.7V±3dB, 75ohms, positive
	○	○	(S signal) chroma input	0.3V±3dB, 75ohms, positive
16	○	●	Blanking input (Ys signal)	High state (1–3 V) Low state (0–0.4 V) Input impedance: 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V±3dB, 75ohms, positive Sync: 0.3V (–3, +10dB)
	○	○	Video input	1 V±3dB, 75ohms, positive Sync: 0.3V (–3, +10dB)
20	○	○	Video input/Y (S signal)	1 V±3dB, 75ohms, positive Sync: 0.3V (–3, +10dB)
21	○	○	Common ground (plug, shield)	

○ connected

● unconnected (open)

\* at 20 Hz–20 kHz


4 pin connector (③)

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V±3dB 75ohm, positive Sync 0.3V <sup>-3</sup> / <sub>+10</sub> dB
4	C (S signal) input	0.3V± 3dB 75ohm positive

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1. GENERAL</b>			<b>4. CIRCUIT ADJUSTMENTS</b>		
	How to Receive NICAM TV Programmes.....	4	4-1.	A Board Adjustments.....	19
	Turning the TV Unit ON and OFF.....	5	4-2.	A1 Board Adjustment.....	19
	TV Channel Presetting.....	5	4-3.	B1 Board Adjustments.....	20
	Basic Functions.....	7	4-4.	D Board Adjustments.....	21
	Special Functions.....	8	4-5.	J1 Board Adjustments.....	21
	Use of the Teletext Service.....	8	4-6.	V Board Adjustment.....	22
	Connections and Optional Functions.....	10	4-7.	Secondary Adjustments.....	22
	General Information.....	11			
<b>2. DISASSEMBLY</b>			<b>5. DIAGRAMS</b>		
			5-1.	Block Diagram.....	23
2-1.	Rear Cover Removal.....	12	5-2.	Circuit Boards Location.....	29
2-2.	Chassis Assembly Removal.....	12	5-3.	Schematic Diagrams and Printed Wiring Boards.....	29
2-3.	A, A1 and J1 Boards Removal.....	12	5-4.	Semiconductors.....	62
2-4.	B1 and V Boards Removal.....	13			
2-5.	Service Position.....	13	<b>6. EXPLODED VIEWS</b>		
2-6.	Picture Tube Removal.....	14			
<b>3. SET-UP ADJUSTMENTS</b>					
3-1.	Beam Landing.....	15			
3-2.	Convergence.....	16			
3-3.	Focus.....	18			
3-4.	White Balance.....	18			

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## How to Receive NICAM TV Programmes

This TV is capable of receiving NICAM, which is a newly developed digital stereo broadcast for TV programmes.

NICAM programmes are broadcast in three ways : stereo, bilingual or monaural sound besides the regular (FM mono) sound. You can select the sound you want to hear by pressing the A/B button.

Action	Result
Press A/B on the Remote Commander.	The NICAM sound mode changes respectively. The selected sound mode differs depending on the broadcast.

### The selected sound mode

NICAM sound being broadcast	The sound you hear
Stereo	Stereo → Regular → Stereo (etc.)
Bilingual	A → B → Regular → A (etc.)
Monaural	A → Regular → A (etc.)

### On-screen indications and the NICAM indicator

The selected mode (STEREO, MONAURAL, SOUND-A or SOUND-B) appears on screen, and the NICAM indicator on the TV lights up as indicated in the following chart :

The sound being broadcast	The selected sound	NICAM indicator	Indications on the screen
NICAM+Regular	Stereo	×	STEREO
	A	×	SOUND-A
	B	×	SOUND-B
	Regular	×	MONAURAL
Regular	Regular	○	○

× means that the indicator lights up or the indication appears.

○ means that the indicator does not light up or the indication is not displayed.

### The sound heard when you turn on the TV

Depending on the NICAM sound programme, the sound heard when you turn on the TV is different.

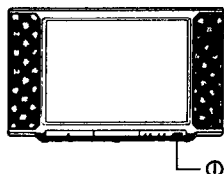
NICAM sound programme	The sound heard
NICAM sound and the regular sound are the same	NICAM sound
NICAM sound and the regular sound are different	Regular sound

Note) The layout, etc., will be slightly different from the operating instructions packed with the units.

## SECTION 1 GENERAL

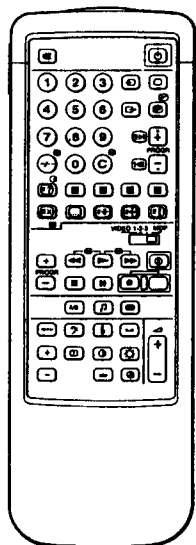
### Turning the TV unit ON and OFF

After you have completed the basic preparation your TV is ready to be connected to the mains power supply (220/240V~, 50Hz).



Turning the TV unit ON	
Action	Result
1 Press  on the TV.	The TV will turn on. Note: If the screen remains blank, the TV may be in the standby mode. Press  to switch it on.

Turning the TV unit OFF	
<b>A Temporarily</b>	
Press  to enter the standby mode.	The TV will be in the standby mode. To return to the TV mode press .
<b>B Completely</b>	
Press  on the TV set.	The TV will be turned off.



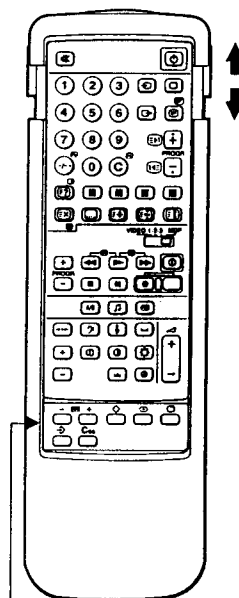
### TV channel presetting

After installing the TV set, TV channels must be preset.

TV broadcasting stations broadcast their programmes on certain fixed frequencies (channels). In order to receive these programmes it is necessary to search for the relevant broadcasting station and to set record it as a channel. The "programme number" is the number that the user decides to associate with a certain channel. For channel settings there are 60 positions available in the memory. In this way all stations broadcasting within the user's country can be received and recorded as a channel.

#### TV channels automatic presetting

If you are unfamiliar with the transmission frequency of the channels you wish to preset, refer to the section "TV channels automatic presetting". However, if you want to tune them using the frequency of each channel, go to the section "Direct TV channel setting". To select a button on the "complete" side, take out the remote control unit from its case to reveal the preset buttons, as shown in the illustration.

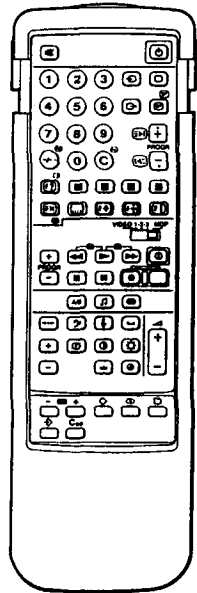


Note: These buttons should be used in preset mode only.

Operation	Result
1 Press  to begin the preselection.	The programme number flashes.
2 Press <b>PROGR</b> +  or the remote control unit number buttons to select the channel number to which you want to preset the station.	The programme number on the screen changes.
3 To search for broadcasting stations press  and  buttons.	When a broadcasting station is tuned correctly, the search will stop. If you want to skip it, press  or  again.
4 Press  to memorize the channel to that which the broadcasting station is tuned.	All data disappears from the screen.
5 To memorize other broadcasting stations repeat steps from 1 to 4.	

## TV channel presetting

### Direct TV channel setting



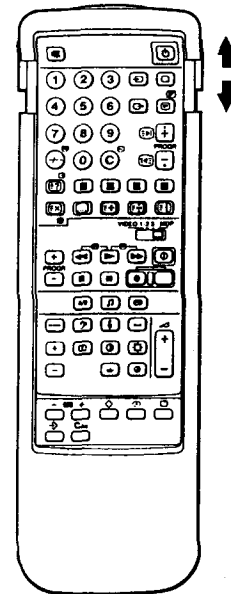
Operation	Result
<b>1</b> Press → to begin the presetting. 	The programme number begins to flash on the screen.
<b>2</b> Press PROG + /- or the number buttons on the remote control unit to select the channel number to which you want to preset the station.  <b>Note</b> To select a 2-figure number press -/- button. E.g., if you wish to select number 23, press -/- first, and then 2 and 3.	The programme number on the screen changes.
<b>3</b> Press C. If you wish to select a cable station, press C twice.	Indication "C-" ("S-" for cable stations) flashes on the screen
<b>4</b> By using the number buttons of the remote control unit select the channel number, always with two figures (for "4" press "04").  <b>Note:</b> Press the second number within 5 seconds of the first. After 5 seconds the operation is cancelled.	The channel number changes on the screen.  <b>Note:</b> In case of mistake, the "X" letter appears on the screen. Repeat once more the operation of step 4.
<b>5</b> Press ◊ to memorize the channel to which the station is tuned. 	All indications disappear from the screen.

To memorize other broadcasting stations repeat the above procedure.

### Broadcasting station identification

By associating a name with a certain broadcasting station it is possible to avoid having to remember, each time, in which channel number that particular station has been memorized.

Five different characters are available for station identification.



Operation	Result
<b>1</b> By using PROG + or -, or the number keys of the remote control unit, select the programme number to be set for identification. 	The programme number to be set for identification appears on the screen.
<b>2</b> Press →	The number flashes on the screen.
<b>3</b> Press ◻	The first indication line flashes on the screen.
<b>4</b> Press the + or - buttons to select a letter of the alphabet, a number, or a blank space.	Alphabetic letters, numbers or a blank space (" ") appear on the screen, in that order.
<b>5</b> Press ◻	In this way the first character has been set, and the following position now flashes on the screen.
<b>6</b> Repeat steps 4 and 5, and fill all five available spaces.	
<b>7</b> Press ◊	All indications disappear from the screen, except the programme number. All indications remaining on the screen have been memorized.

### Temporary channel tuning


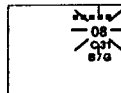



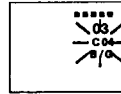

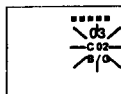

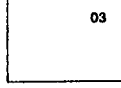
It is possible to temporarily memorize a channel, even if it has not been preset.

Operation	Result
<b>1</b> Press C. Press C twice for a cable station.	"C" ("S" for cable stations) indication appears on the screen.
<b>2</b> Using the number keys of the remote control unit select the channel number, always with two figures (e.g., "04" for channel "4").	The channel will be received, but it will not be set as a programme number.

## Basic functions

### Skipping channels

Using the **PROGR +/–** buttons you can skip unused programme numbers. However, the skipped numbers may still be called up using the number buttons.

Operation	Result
<b>1</b> Press <b>→</b> to begin presetting. 	 The programme number begins to flash on the screen.
<b>2</b> By using the <b>PROGR +</b> and <b>–</b> buttons, or the number keys of the remote control unit, select the programme number you wish to skip.   	 The programme number changes.
<b>3</b> Press <b>C00</b> . 	 Under the programme number, the lowest channel number appears.
<b>4</b> Press <b>◇</b> . 	 All indications under the programme number disappear from the screen. The skipped programme number will be memorized.

### Manual fine tuning




If the picture is not perfect, it is possible to fine tune it manually.

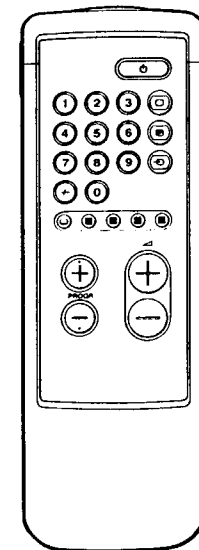
Operation	Result
Press <b>FFB</b> + or – repeatedly until the picture is at the optimum.	The indication <b>←F→</b> appears on the screen.
Press <b>→</b> to start preselection.	The programme number starts flashing on the screen.
Press <b>◇</b> .	Manual fine tuning has been memorized.

**Note:** Manual fine tuning will be reset when the channel is selected again.

To open, press the arrow .






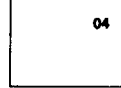
  






This section introduces you to the basic control functions which are available on the "simple" side of the remote control unit.

### Programme selection

Before selecting programmes make sure that TV channels have been memorized.

Operation	Result
Press <b>PROGR +/–</b> buttons or the number keys of the remote control unit. To select a 2-figure number press <b>/–</b> button. E.g., if you wish to select number 23, press <b>/–</b> first, and then 2 and 3.   	 The selected programme number appears on the screen.

### Volume control

Operation	Result
Press <b>Δ</b> + or <b>–</b> .  	 The volume indication appears on the screen.

### Use of additional functions

#### Use of other functions with the TV set buttons

It is also possible to select programmes and to adjust the volume by using **P→Δ→** and **→+ +** or **–** buttons, located on the front panel of the TV set. In this case, press first **P→Δ→** until the indication **P** (channel) or **Δ** (volume) appears on the screen, and then press **→+ +** or **–** buttons.

#### Use of teletext service

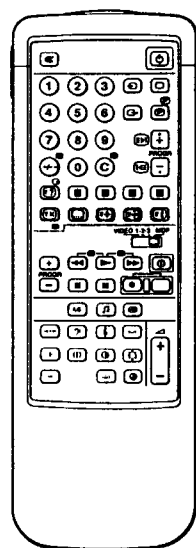
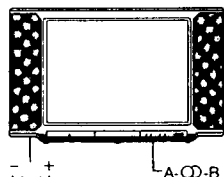
Press **Ⓢ**. To return to the TV mode, press **○**. For further information on the teletext service see page 12.

#### Selection of the video input

Press **Ⓢ**. To return to the TV mode, press **○**. For further details, refer to page 16.

## Special functions

This section explains the use of functions for adjusting pictures and sound. Use the "complete" side of the remote control unit.



### Use of special functions

The following functions can be used.

Function	Operation	Reset
Indication display	Press <b>G</b>	Press <b>G</b> again.
Sound muting	Press <b>M</b>	Press <b>M</b> again.
Language selection for bilingual programmes.	Press A/B. The selected language is displayed by the relevant indication on the screen.	Press A/B.
Sound adjustment for music programmes.	Press <b>M</b>	Press <b>M</b> again.
Use of special sound effects.	Press <b>G</b>	Press <b>G</b> again.
Time display (only during teletext broadcasting).	Press <b>G</b>	Press <b>G</b> again.

### Picture and sound adjustment

Although the picture and sound have been adjusted at the factory, you might want to adjust them to your own taste. To do this, please follow the steps below.

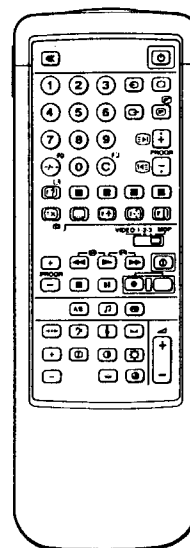
To Adjust:	Press:	Then:	Result: (+ -- -)
<b>Picture:</b>			
Colour intensity	<b>C</b>	<b>+</b>	More -- Less
Contrast	<b>I</b>		More -- Less
Brightness	<b>B</b>	<b>-</b>	Bright -- Dark
Hue (for NTSC only)	<b>H</b>		Reddish -- Greenish
Sharpness	<b>S</b>		More -- Less
<b>Sound:</b>			
Bass	<b>L</b>	<b>+</b>	More -- Less
Treble	<b>H</b>		More -- Less
Balance	<b>B</b>	<b>-</b>	Left -- Right

To reset the picture and sound to factory set levels, press **→←**.


On the set: Press the **→←** and **+/-** buttons simultaneously.

## Use of the teletext service

Through the teletext service a great deal of information can be received at any time. Broadcasting stations make this service available through TV broadcasts. To use the teletext service, use the green keys on the "complete" side of the remote control unit. When the "simple" side of the remote control unit is used, only the basic functions are available.


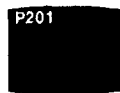


### How to display teletext service

Operation	Result
<b>1</b> Select the channel you want to watch.	The channel changes on the screen.
<b>2</b> Press <b>G</b>	 If there is no teletext signal, the indication "Page 100" appears on the screen.
<b>3</b> Use the number keys of the remote control unit to insert the three figures corresponding to the desired teletext page. <b>Note</b> In case of a mistake, press any three numbers, and then repeat the operation with the correct numbers.	The selected page number appears on the screen. After a few seconds, the selected page appears on the screen.
<b>To return to normal TV programmes:</b> Press <b>O</b> .  <b>To change teletext channel:</b> First press <b>O</b> to return to the TV mode, and then repeat steps 1 to 3.	






Note: A weak TV signal may cause trouble in the use of teletext.

### Use of special teletext functions

Required function	Operation	Result (on the screen)
Page index required.	Press <b>G</b> (INDEX).	 Page Index appears.
Sub-pages required (page 888).	Press <b>O</b> .	The sub-page appears (page 888).
Access to previous or following pages.	Press <b>E</b> (PAGE +) or <b>D</b> (PAGE -).	 The preceding or the following page appears.



## Use of the teletext service

Required function	Operation	Result (on the screen)
Superimposition of the teletext on the TV programme.	In the TV mode, press <b>Ⓢ</b> twice.  To return to the normal teletext function press <b>Ⓢ</b> again.	 Teletext information will appear superimposed on the TV programme.
To prevent page changes due to page updating.	Press <b>Ⓢ</b> (STILL). Press <b>Ⓢ</b> (TXT/MIX) to return to the normal function.	 The <b>Ⓢ</b> (STILL) symbol appears on the screen.
Magnification of teletext characters.	Press <b>Ⓢ</b> once to magnify the upper half of the screen. Press twice to magnify the lower half of the screen. By pressing the button three times the normal vision is restored.	 The upper or the lower half of the page is magnified.
Display of hidden information (answers to quizzes, etc.).	Press <b>Ⓢ</b> (RIV).  Press again to hide the answers.	 The information is displayed.
Watching a programme while the teletext searches for the required page.	1. Ask again for the page.	The number is displayed.
	2. Press <b>Ⓢ</b>	TV programme is displayed.
	3. When the required page has been found, the page number will be displayed.	
	4. Press <b>Ⓢ</b> to display the page.	The desired page will be displayed.
Display of a page at a preset time.	1. Request the page.	The selected page will be displayed.
	2. Press <b>Ⓢ</b> (MEM.T).	In the lower part of the screen the indication "T*****" appears.
	3. Set the required time by using the number keys, and by inputting four figures (e.g. 0730 for "7:30").	The required time is displayed on the screen.
	To watch TV programmes until a preset time Press <b>Ⓢ</b> (CANC.). At the required time, the selected page appears in the upper part of the screen. Press <b>Ⓢ</b> to display the page.  To cancel the request Display the teletext page and then press <b>Ⓢ</b> (CANC.M.).	

Note: Depending on the teletext service, certain functions may not be available.

## Use of the FASTEXT function

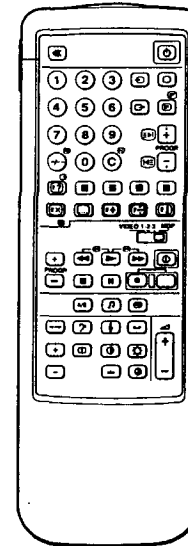
The FASTEXT function allows rapid access, at the touch of a single button, to the teletext functions. In the lower part of the screen, a colour coded index will be displayed when a FASTEXT teletext page is broadcasted. Each colour corresponds to the colored keys on the remote control unit.

### Operation

Operation	Result
Press one of the coloured keys on the remote control unit corresponding to the coloured indications of the FASTEXT teletext page.	The selected teletext page appears on the screen.

### Note:

The correct use of the FASTEXT function depends on the signal being broadcast by the TV stations. Some TV stations may not broadcast FASTEXT teletext signal.



## Connections and optional functions

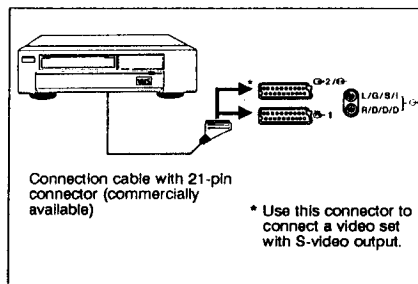
This TV set may be connected to other audio/video machines, such as videocameras, VTRs, videodisc players, or stereo systems.

### Connection to an external audio/video system

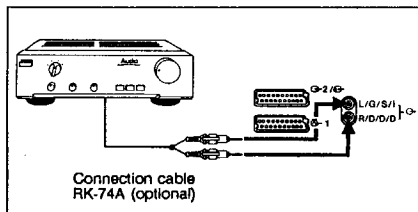
This TV set incorporates three groups of connectors, for input and output to the TV signal. Each group has the following characteristics.

Connector	Input signal	Output signal
Ⓐ-1	Normal audio/video signal or RGB signal	TV tuner audio/video signal
Ⓐ-2/Ⓐ-3	Normal audio/video signal and S-video signal	Audio/video signal from a selectable source
Ⓐ-3, Ⓐ-2, -Ⓐ front panel	Normal audio/video signal and S-video signal	No signal

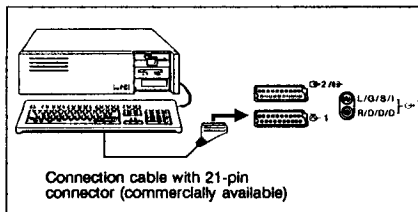
#### Connection of a TV set



#### Connection of an audio unit

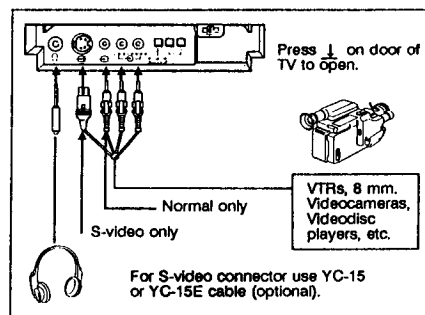


#### Connection to a computer with RGB output



#### Temporary connection of video apparatus

For a temporary connection (e.g. of a videocamera) use the front panel terminals.



#### Connection of a videotape recorder through the T connector

Connect the antenna input (AERIAL-IN) of the TV set to the antenna output (AERIAL-OUT) of the videotape recorder.

#### S-video input (Y/C input)

The video signal is formed by two separate signals: the luminance (Y) and the chrominance (C). Through the separation of the two signals it is possible to improve picture quality (luminance in particular), preventing reciprocal interference. This TV set features two S-video sockets able to directly receive this type of signal.

#### Pictures with distortion

Move the TV set away from the videotape recorder if pictures or sound become distorted.

## Connections and optional functions

### Video programme playback

Using the input selector, pictures coming from a videotape recorder connected to the TV sets input may be played back.

#### Operation

Operation	Result
Select the desired video input by pressing  repeatedly.	The symbol of the selected input appears on the screen (see table below).
Press  button to return to TV mode.	

#### Selectable inputs

Symbol	Selected input
	Audio/video signal from Ⓐ-1 connector.
	RGB signal from Ⓐ-1 connector.
	Audio/video signal from Ⓐ-2/Ⓐ-3 connector.
	S-video signal (from a VTR with S-video output) from Ⓐ-2/Ⓐ-3 connector.
	Audio/video signal from Ⓐ-2, -Ⓐ connector located on the front panel.
	S-video signal from S-video -Ⓐ (4 pin) connector located on the front panel.

Input can be selected also with the buttons of the TV set.

In this case, first select , and then press the + / - buttons to select the desired input.

### Selection of video output

The Ⓐ-2/Ⓐ-3 connector may output 4 video signals. Select the outgoing video signal in the following way.

#### Operation

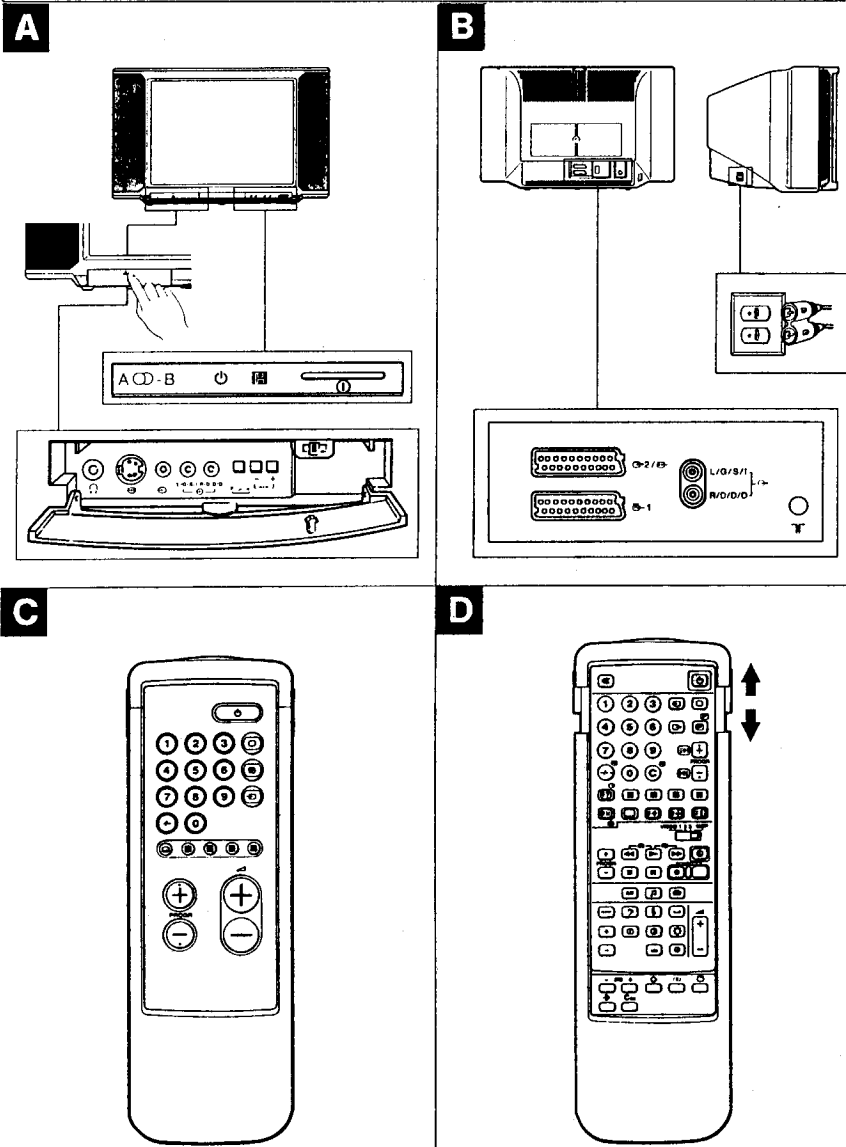
Operation	Result
Press  repeatedly to select the desired video output.	The selected video output symbol appears on the screen (see the table following).

#### Output signal

Symbol	Selected output
	Audio/video signal from Ⓐ-1 connector.
	Audio/video signal from Ⓐ-2/Ⓐ-3 connector.
	Audio/video signal from Ⓐ-2 and -Ⓐ connectors.
TV	Audio/video signal from T-type antenna connector .

# General information

## Components identification



# General information

This section briefly describes controls of the TV set and the remote control unit, and their relevant functions.

A TV set front panel	
Indication	Description
	Power switch
	Standby switch
A - ∞ - B	Bilingual function indications
	Headphones connector (stereo mini-jack)
	Input connectors (S-video/video/audio)
	Function selector (programme/volume/input)
	Function adjustment keys

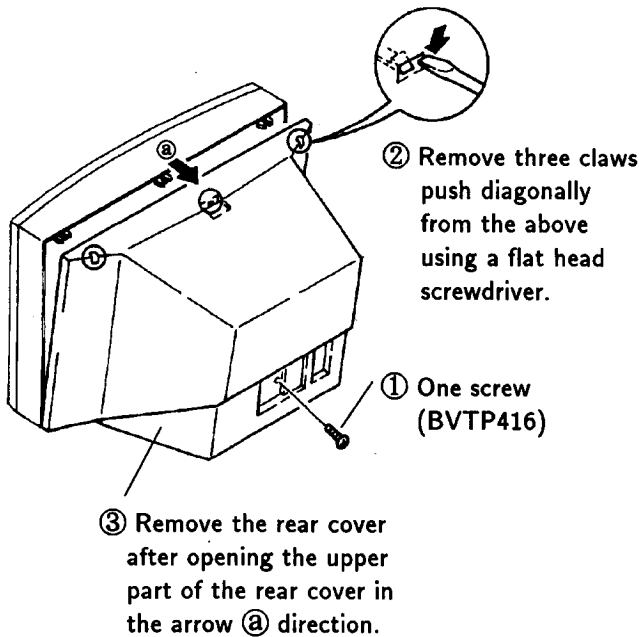
B TV set rear panel	
Indication	Description
	Speaker connectors (upper: left speaker; lower: right speaker)
	Connector 2, Euro AV (SCART, 21-pin). S-video In/video In/TV/video out signals.
	Connector 1, Euro AV (SCART, 21-pin). RGB In/video In/TV/out signals.
	Audio output connectors (RCA pin)
	Antenna connector (of IEC standard)

C Remote control unit — simplified side	
Indication	Description
	Input selector
	Teletext service key
	FASTEXT operation buttons
	TV set power switch and TV mode selector
	Standby key
1,2,3,4,5, 6,7,8,9,0	Number keys
+/-	Channel selection key/ 2-figure programmes
	Volume adjustment key
PROGR +/-	Programme selection key

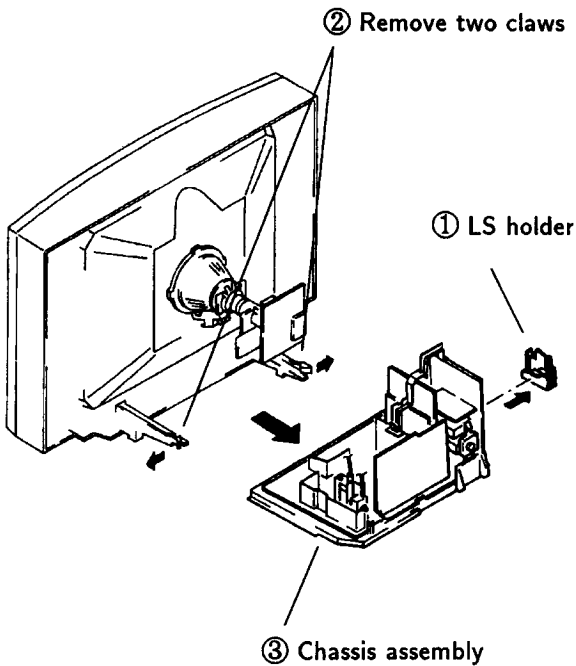
D Remote control unit — complete side	
Indication	Description
	Sound muting key
	Standby key
1,2,3,4,5, 6,7,8,9,0	Number keys
	Input selector
	TV set power switch and TV mode selector
	Output selector
	Teletext key
	Music programme key
A/B	Bilingual programmes language selection
+/-	Channel selection key/ 2-figure programmes
C	Channel direct selection key
	Special sound effect key
	Time display
	Teletext operation keys
	FASTEXT operation buttons
	Display key
	Reset key
	Volume adjustment keys
PROGR +/-	Programme selection keys
	Image and audio adjustment keys
VIDEO 1/2/3, MDP	Video unit selector
	Video units function key
Coo	Programme cancelling key
	Channel presetting key
-  +	Channel tuning keys
	Channel storing keys
	Broadcasting stations identification key

## SECTION 2 DISASSEMBLY

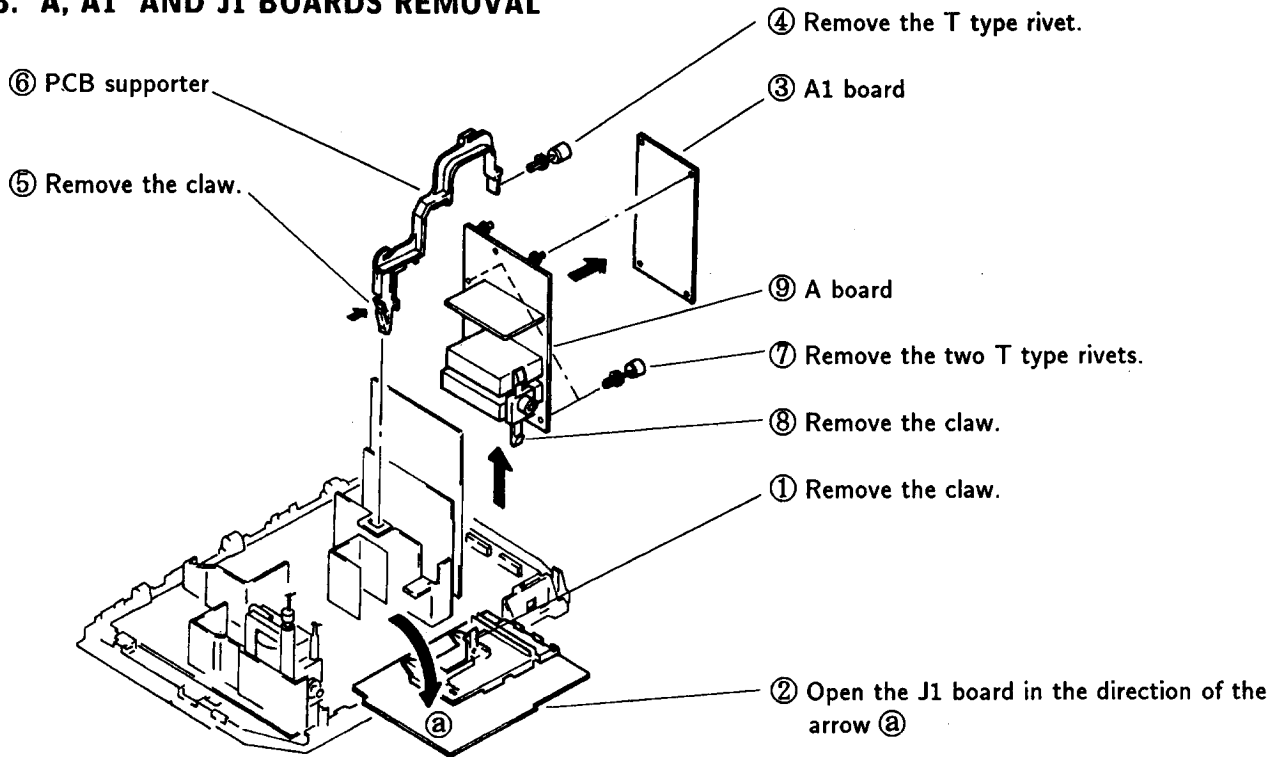
### 2-1. REAR COVER REMOVAL



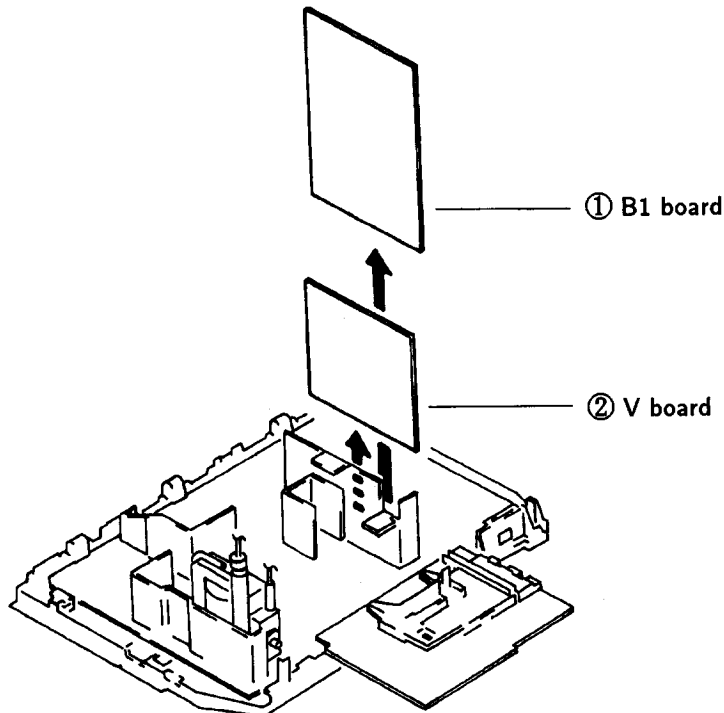
### 2-2. CHASSIS ASSEMBLY REMOVAL



### 2-3. A, A1 AND J1 BOARDS REMOVAL



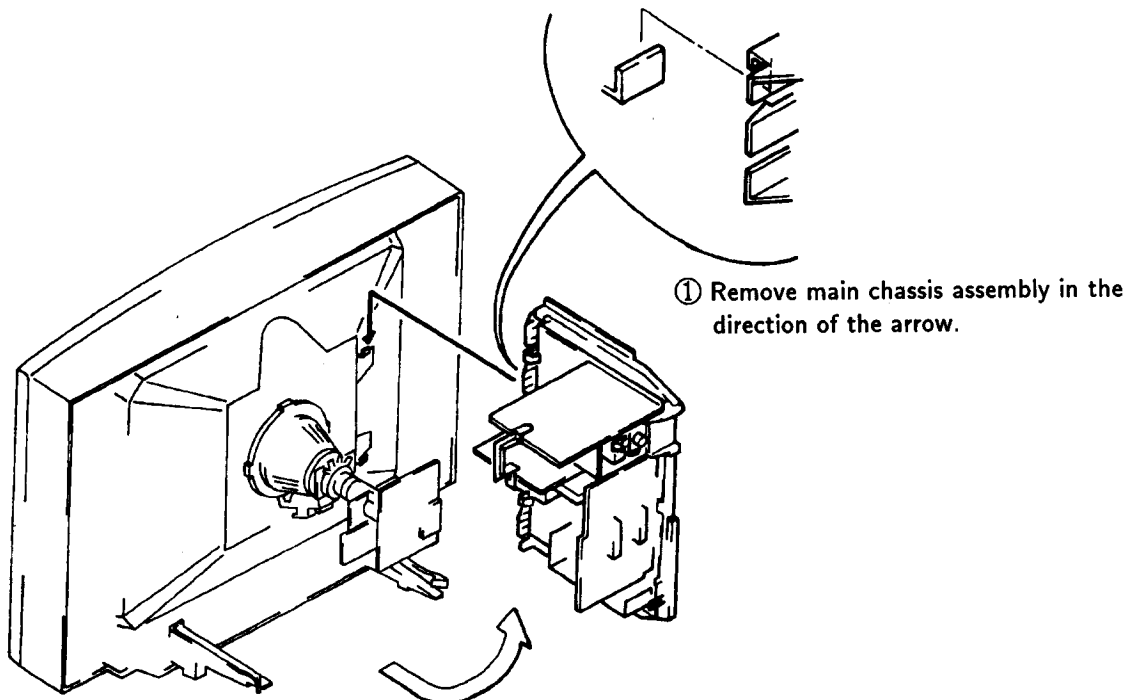
## 2-4. B1 AND V BOARDS REMOVAL



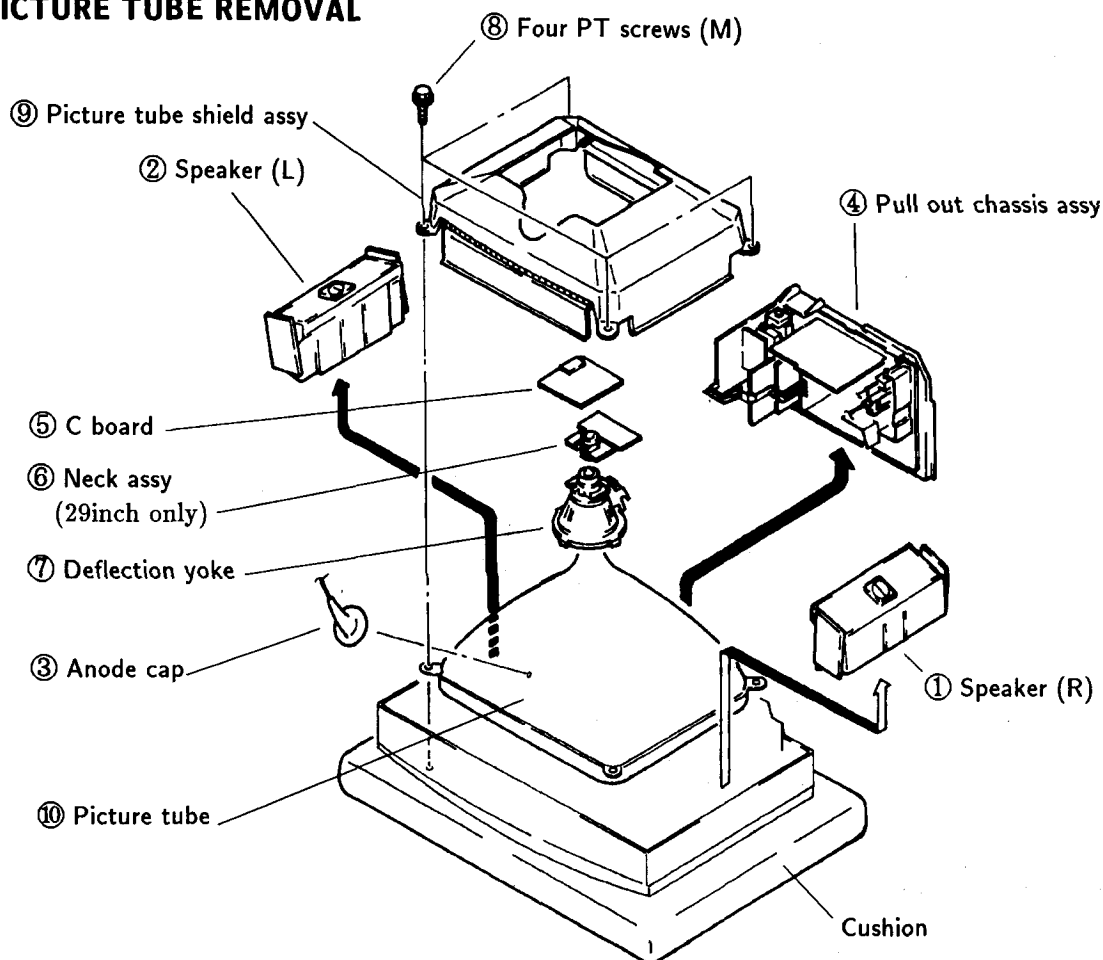
Note : 10 pin extension cable (S-0945-001-0)

## 2-5. SERVICE POSITION

- \* Remove the connector bracket from the main chassis assembly and then perform the following servicing.  
(Refer to 2-2. CHASSIS ASSEMBLY REMOVAL.)

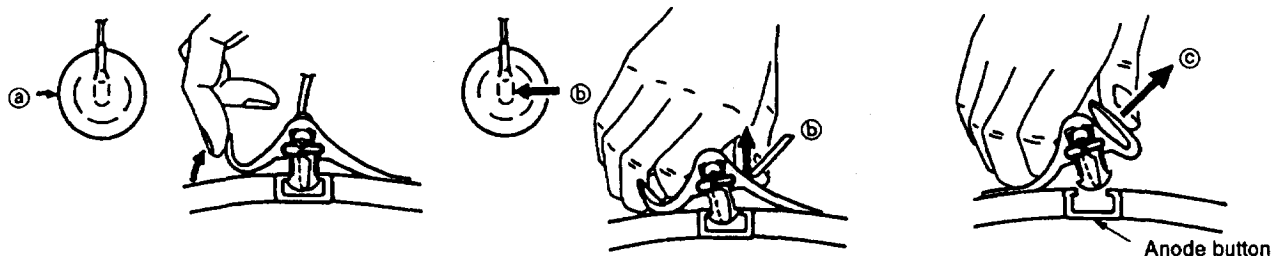


## 2-6. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

#### • REMOVING PROCEDURES



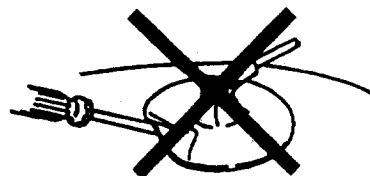
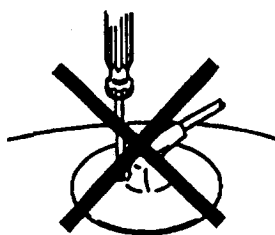
① Turn up one side of the rubber cap in the direction indicated by the arrow ①.

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

#### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!  
A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!  
The shatter-hook terminal will stick out or hurt the rubber.



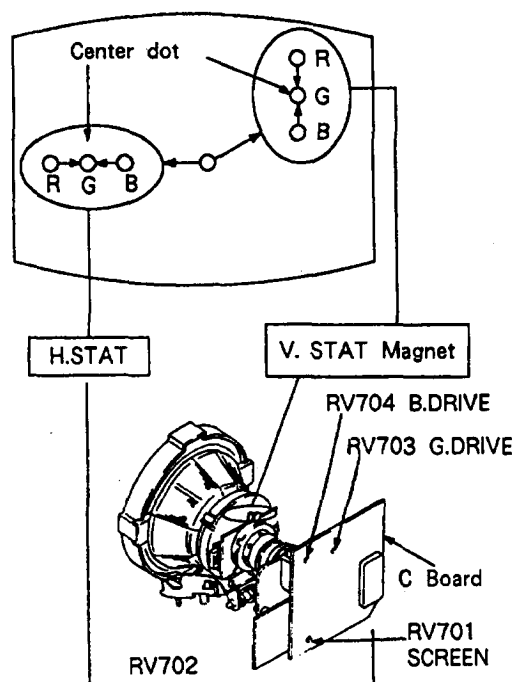


## 3-2. CONVERGENCE

### Preparations :

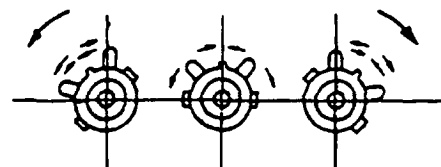
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

### (1) Horizontal and vertical static convergence

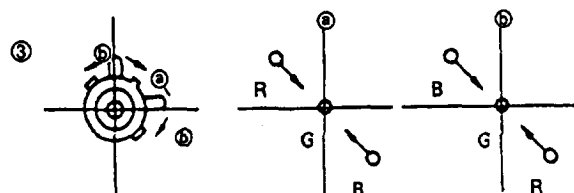
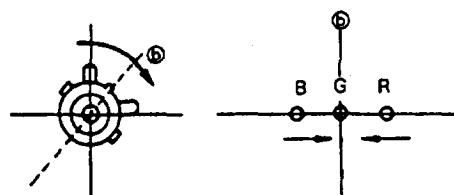
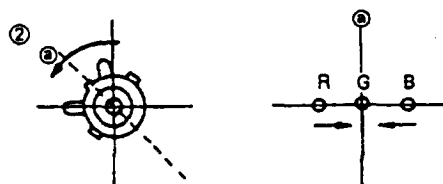
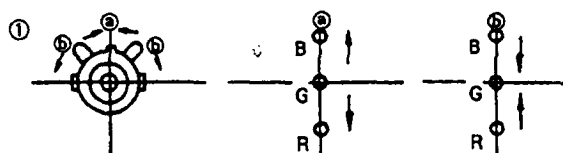


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H.STAT variable resistor and the V. STAT magnet influence each other)

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

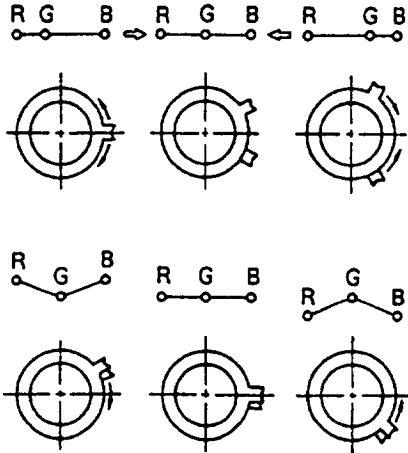


4. If the V.STAT magnet is moved in the direction of the ① and ② arrows, the red, green, and blue points move as shown below.



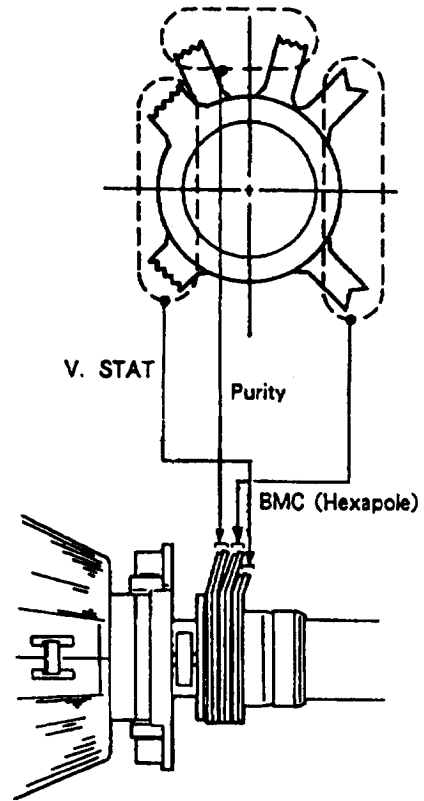


### ● Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.

Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

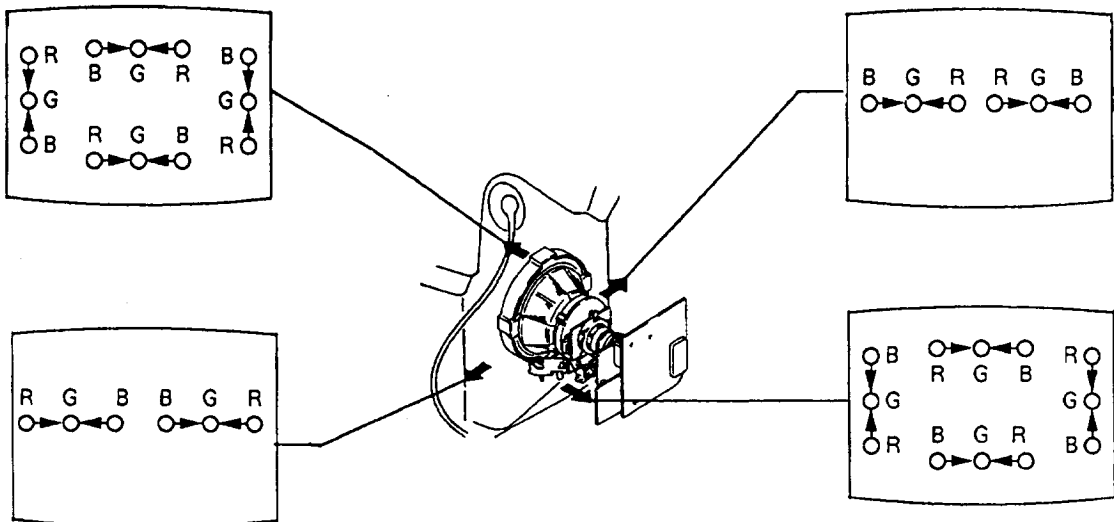


### (2) Dynamic convergence adjustment

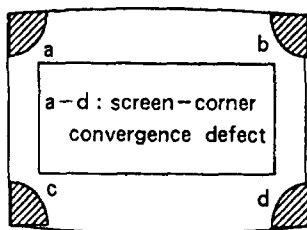
#### Preparations :

Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

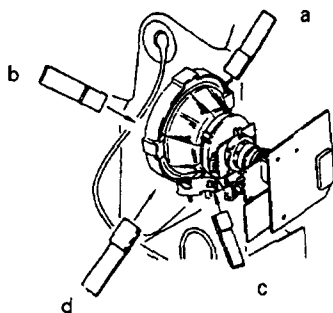
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.



### (3) Screen corner convergence



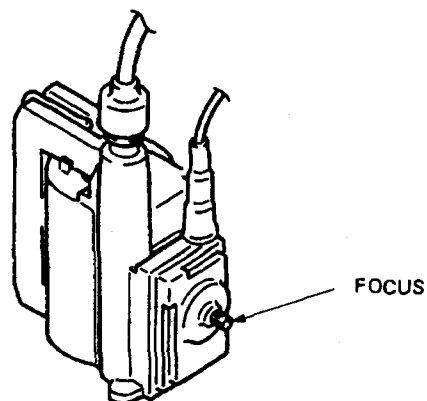
Install the permalloy assembly for the section with faulty.



Permalloy

### 3-3. FOCUS

Adjust the focus to optimize the screen.



### 3-4. WHITE BALANCE

#### [ Screen G2 setting ]

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 170V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

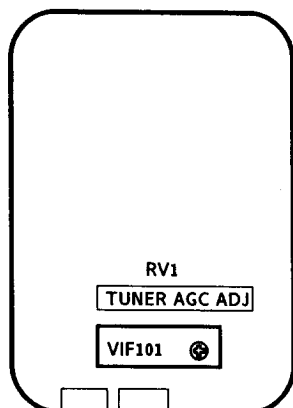
#### [ White balance adjustment ]

1. Input an all-white signal from the pattern generator.
2. Set the picture brightness and color controls to their normal levels.
3. Use the RV704 (B Drive) and RV703 (G Drive) to adjust white balance.

In the adjustments below, have the picture color and brightness settings at their normal levels unless there is a specific instruction to the contrary.

## SECTION 4 CIRCUIT ADJUSTMENTS

### 4-1. A BOARD ADJUSTMENTS

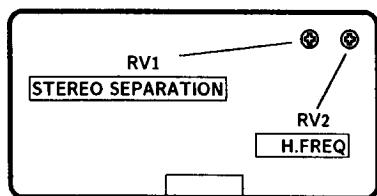


A BOARD (COMPONENT SIDE)

#### **TUNER AGC ADJUSTMENT (VIF101, RV1)**

1. Align with an appropriate signal between stations.
2. Adjust RV1 so that snow noise and cross modulation just disappear from the picture.

### IFG5.5S SIF



IFG5.5S SIF -component side-

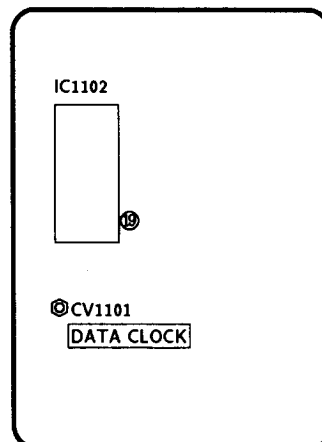
#### **STEREO SEPALATION ADJUSTMENT (RV1)**

1. Input stereo signals. (L-CH 400Hz, R-CH 1KHz)
2. Check the stereo indicator.
3. Connect on oscilloscope to pin⑧ (CH1) of CN1 through band pass filter of 1KHz
4. Adjust RV1 so that 1KHz voltage goes down to the minnum.

#### **H FREQ (RV2)**

1. Input a PAL COLOR BAR signal, then connect a jumper between pin⑫ IC4 and GND.
2. Connect a frequency counter to pin④ IFG5.5S (HP) of CN1 through a probe of 10 : 1.
3. Adjust RV2 (H.FREQ)  $15.625 \pm 50\text{Hz}$ .
4. After adjustment, remove the jamper.

### 4-2. A1 BOARD ADJUSTMENT

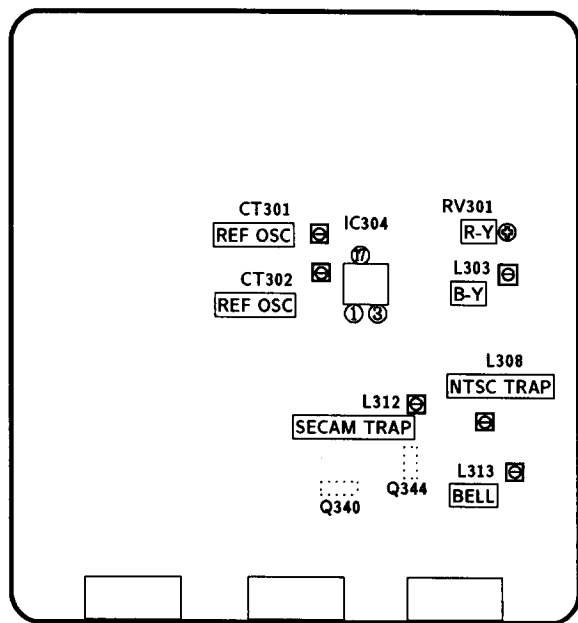


A1 BOARD (COMPONENT SIDE)

#### **DATA CLOCK Adjustment (CV1101)**

1. Tune in a no signal.
2. Connect a frequency counter to pin ⑩ of IC1102 (PCLK) through a probe of 10:1.
3. Adjust CV1101 (DATA CLOCK) so that frequency becomes  $728.022\text{KHz} \pm 1\text{Hz}$ .

### 4-3. B1 BOARD ADJUSTMENTS



### B1 BOARD (COMPONENT SIDE)

## REFERENCE OSCILLATOR ADJUSTMENT (CT302 8.8MHz)

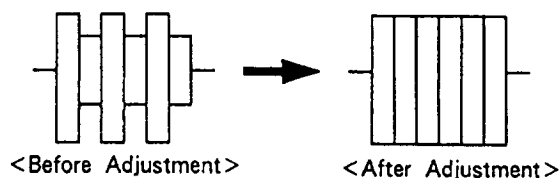
1. Input a PAL color bar signal.
2. Ground pin ⑪ of the IC304.
3. Adjust CT302 to obtain synchronization.

### REFERENCE OSCILLATOR ADJUSTMENT (CT301 7.16MHz)

1. Input an NTSC color bar signal.
2. Ground pin 17 of IC304.
3. Adjust the CT301 to obtain synchronization.
4. Remove the jumper grounding pin 17 of IC304.

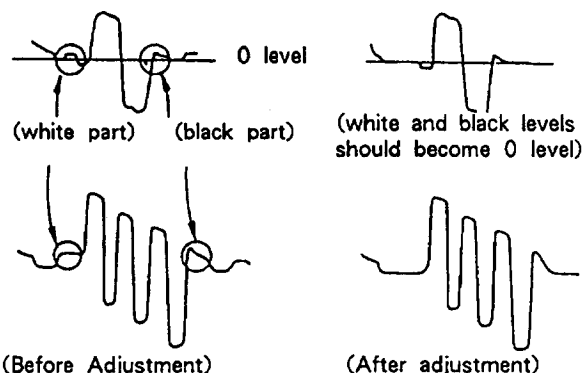
## BELL FILTER ADJUSTMENT (L313)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q344.
3. Adjust L313 so that the waveform is flat.



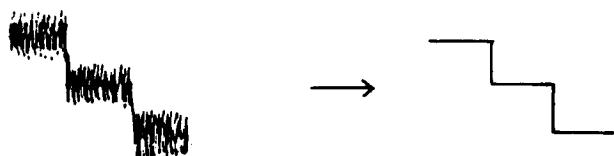
### DISCRIMINATION ADJUSTMENTS (RV301 and L303)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to pin ① of IC304.
3. Adjust RV301 until the white and black sections of the waveform at pin ① are at the 0 level.  
Connect the oscilloscope to pin ③ of IC304.
4. Adjust L303 until the white and black sections of
5. the waveform at pin ③ are at the 0 level.



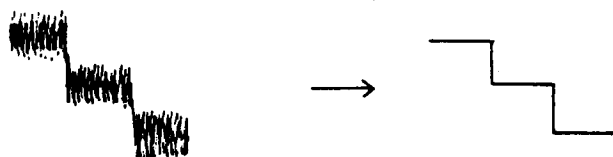
**SECAM TRAP (L312)**

1. Input a SECAM color bar signal.
2. Connect oscilloscope to Q340 emitter and adjust L312 to minimize color carrier on the Y-signal.

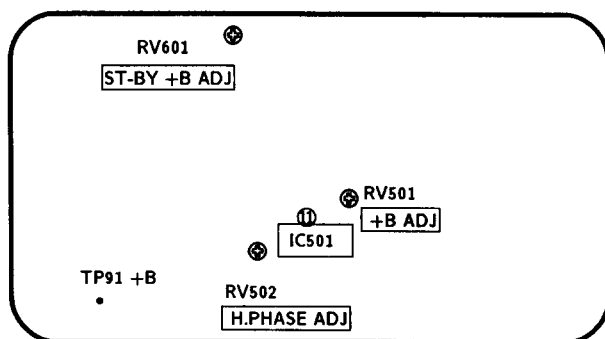


**NTSC TRAP (L308)**

1. Input a NTSC (3.58) color bar signal.
2. Connect oscilloscope to Q340 emitter and adjust L308 to minimize color carrier on the Y-signal.



## 4-4. D BOARD ADJUSTMENTS



D BOARD (COMPONENT SIDE)

**+B ADJUSTMENT (RV501)**

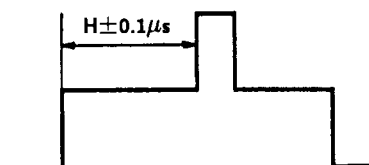
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain  $135 \pm 0.2V$ .

**ST-BY +B ADJUSTMENT (RV601)**

1. Put the system into  $\odot$  standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain  $135 \pm 3V$ .
4. Take the system out of  $\odot$  standby mode (remote commander).

**H.PHASE ADJUSTMENT (RV502)**

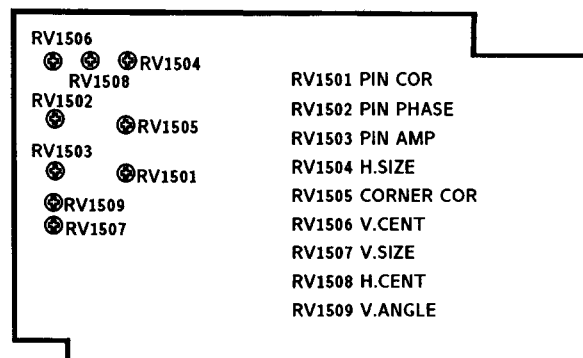
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ⑪ (SCP) of IC 501.
5. Rotate RV502 to adjust to  $H \pm 0.1\mu s$ .



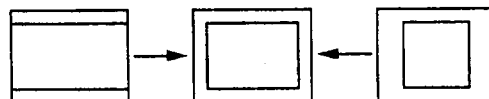
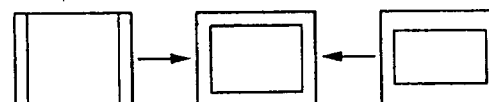
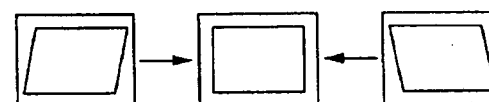
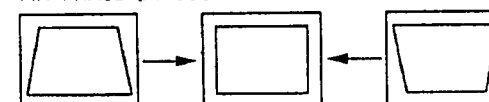
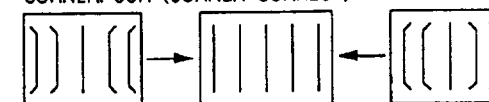
Standard of H. PHASE

Model Size	H
25"	$5.1\mu s$
29"	$5.5\mu s$

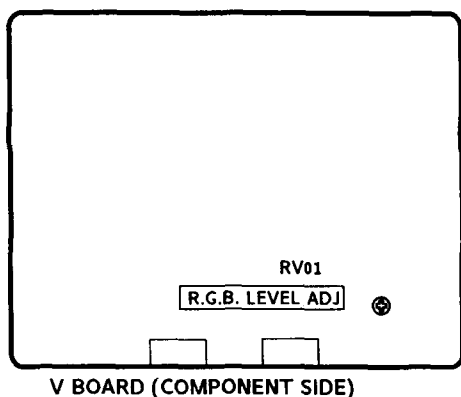
## 4-5. J1 BOARD ADJUSTMENTS



J1 BOARD (COMPONENT SIDE)

RV1508  
H. CENT (HORIZONTAL CENTER)RV1504  
H. SIZE (HORIZONTAL SIZE)RV1506  
V. CENT (VERTICAL CENTER)RV1507  
V. SIZE (VERTICAL SIZE)RV1509  
V. ANGLE (VERTICAL ANGLE)RV1503  
PIN AMP (PINCUSHION AMPLIFIER)RV1502  
PIN PHASE (PINCUSHION PHASE)RV1501  
PIN. COR (PINCUSHION CORRECT)RV1505  
CORNER COR (CORNER CORRECT)

## 4-6. V BOARD ADJUSTMENT



### RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

## 4-7. SECONDARY ADJUSTMENTS

### SUB BRIGHTNESS ADJUSTMENT

1. Set the system to receive a test pattern.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ● contrast setting.
6. Adjust the ☼ brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
  2. Press → • ← on the remote commander to put the system into normal mode.
- Set the ● color to its normal state.

3-5. Steps are the same as above.

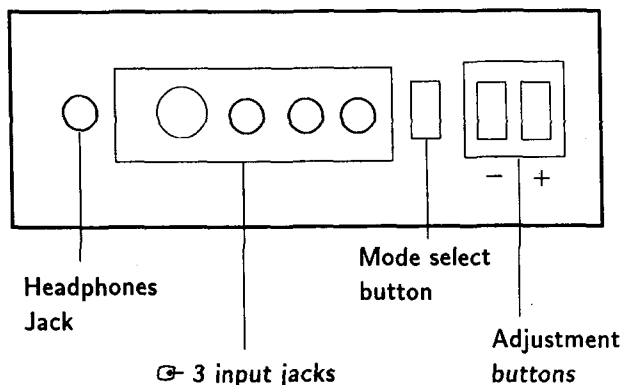
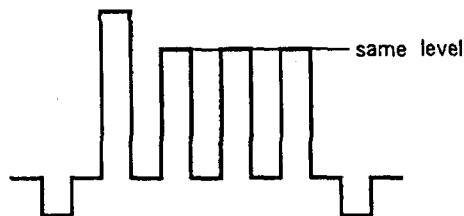
6. Since 20 IRE is nearly blue, adjust the ☼ brightness control so that the blue barely glows.

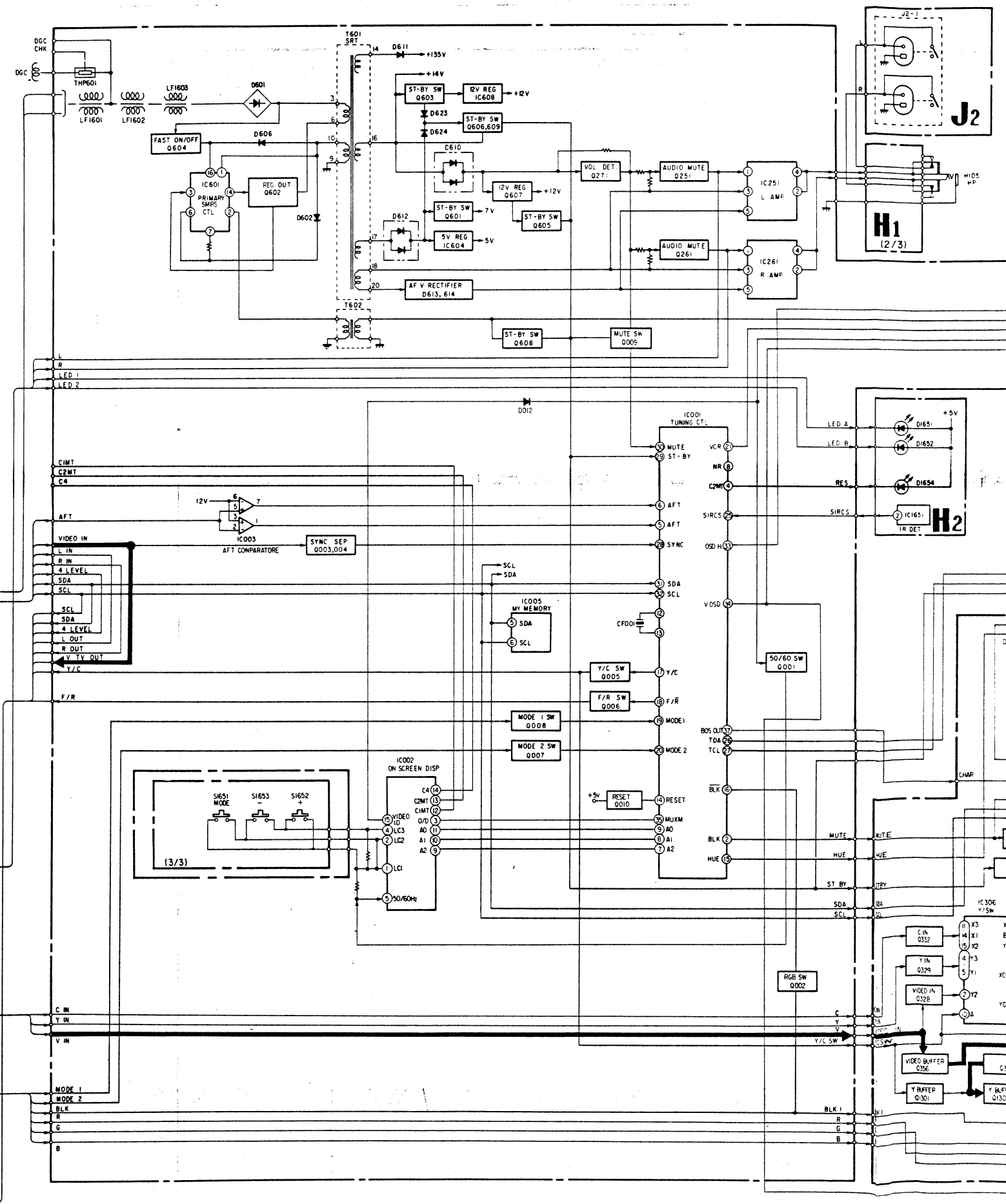
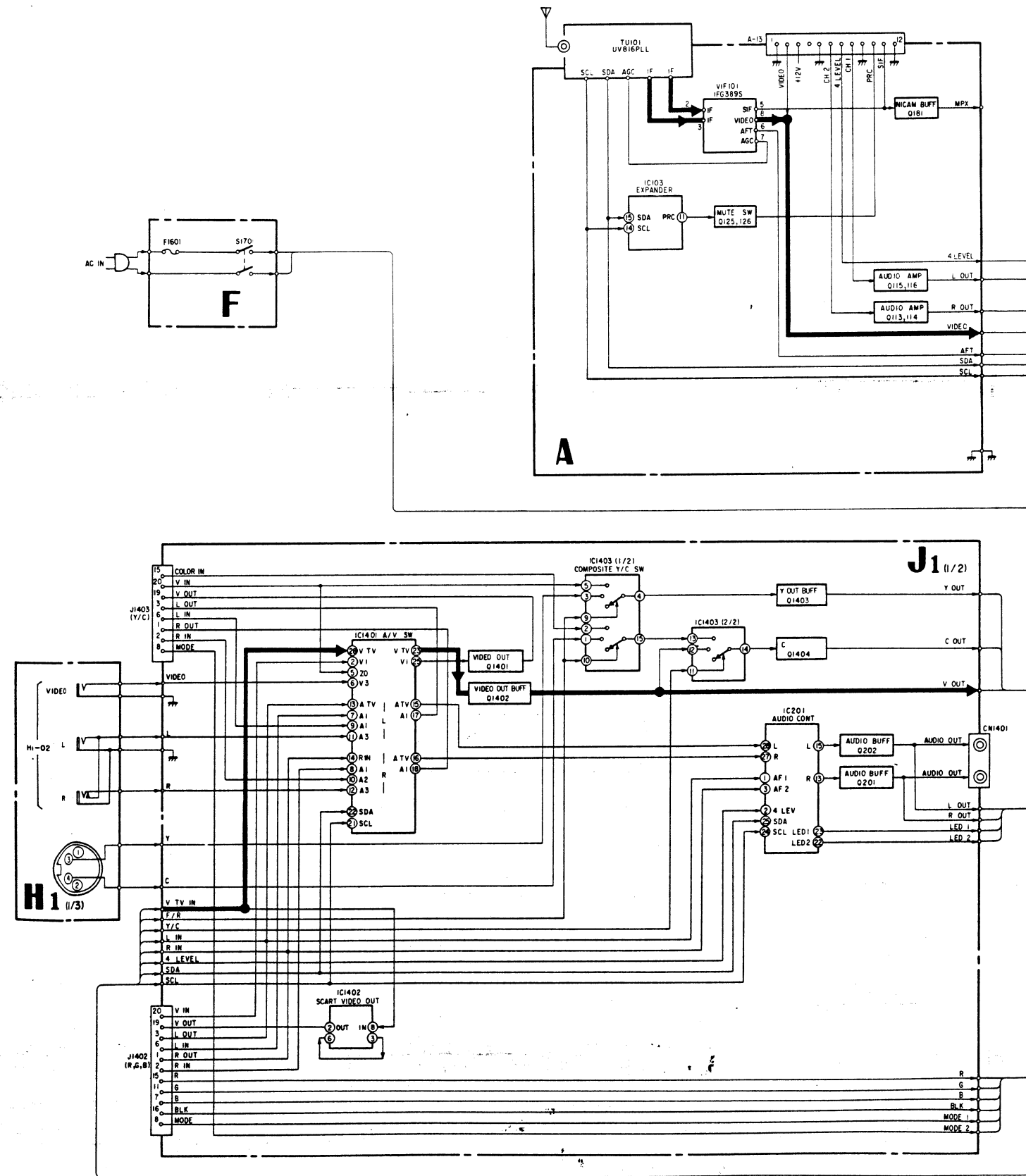
7. Same as step 7 above.

8. Press → • ← on the remote commander to put the system into normal mode.

### SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press → • ← on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained).
5. Adjust the color control so that the B out waveform (pin ⑤ of C board connector CNC72) is as shown in the figure below.
6. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

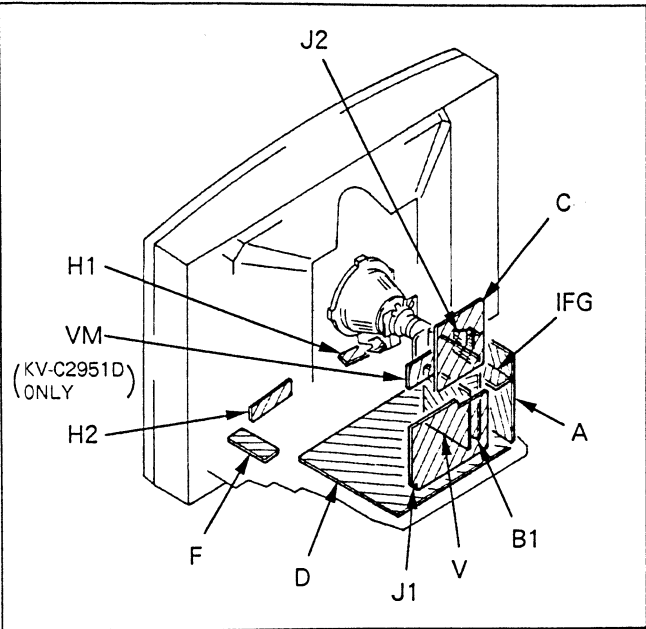









5-2. CIRCUIT BOARDS LOCATION



Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE






5-3. SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note :

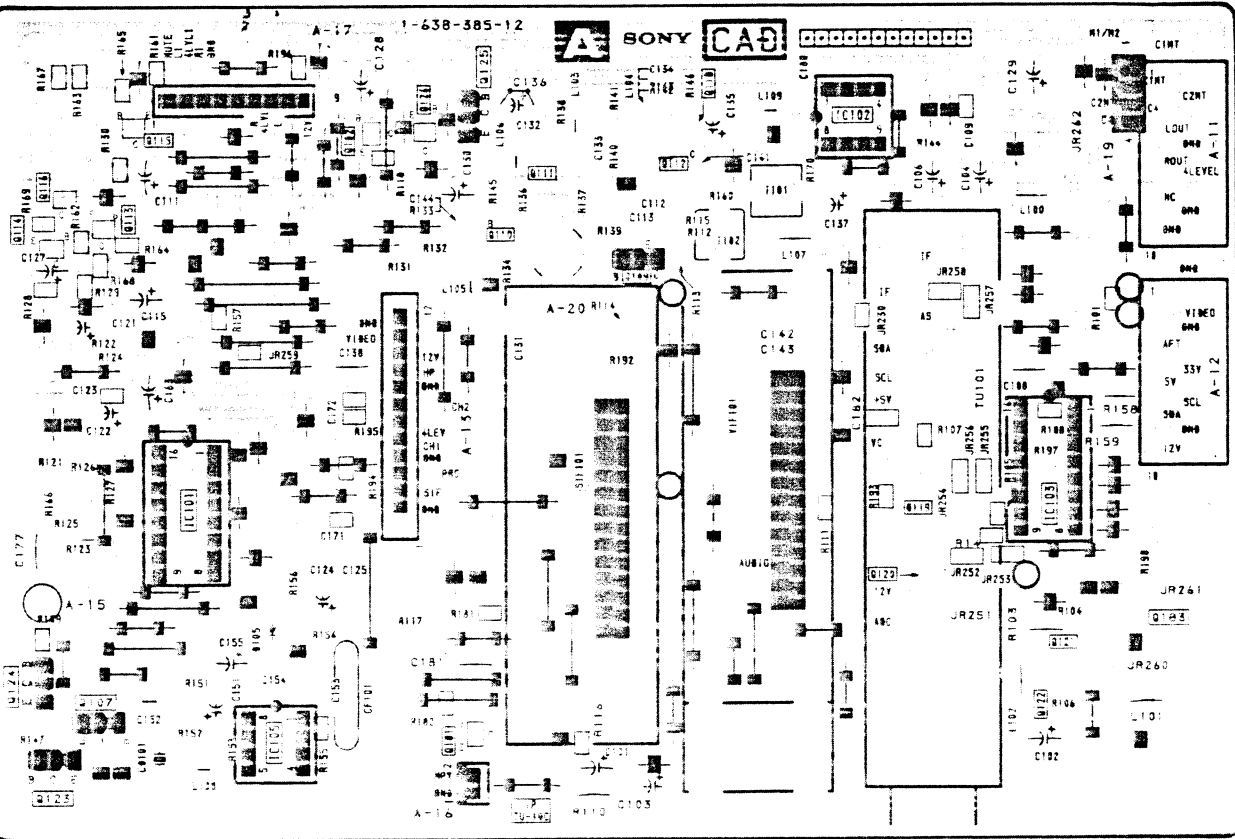
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  
pF :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm  
Rating electrical power : 1/4W

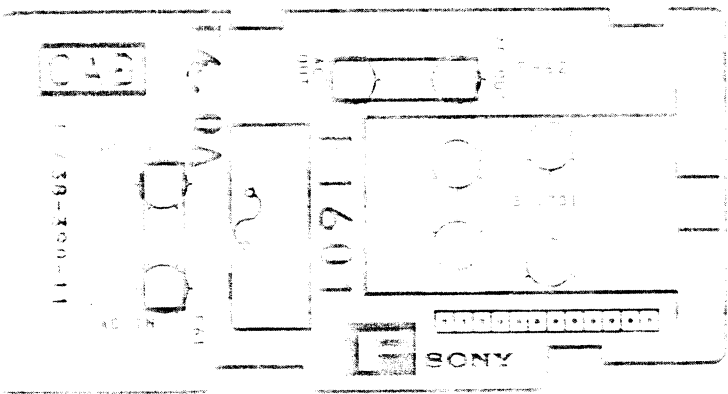
- Chip resistor is in 1/10W.
- All resistors are in ohms.  $\text{k}\Omega = 1000\Omega$ ,  $\text{M}\Omega = 1000\text{k}\Omega$
-  : nonflammable resistor.
-  : fusible resistor.
- $\Delta$  : internal component.
-  : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B.unless otherwise noted.
- All voltages are in V.
- Readings are taken with a  $10\text{M}\Omega$  digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
-  : B + line.
-  : signal path. (RF)

**A** [ TUNER, SIF, VIF ] **F** [ AC IN, POWER SW. ] **J1** [ AUDIO CONTROL, AV INPUT, Y/C INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION ] **J2** [ SPEAKER TERM ]

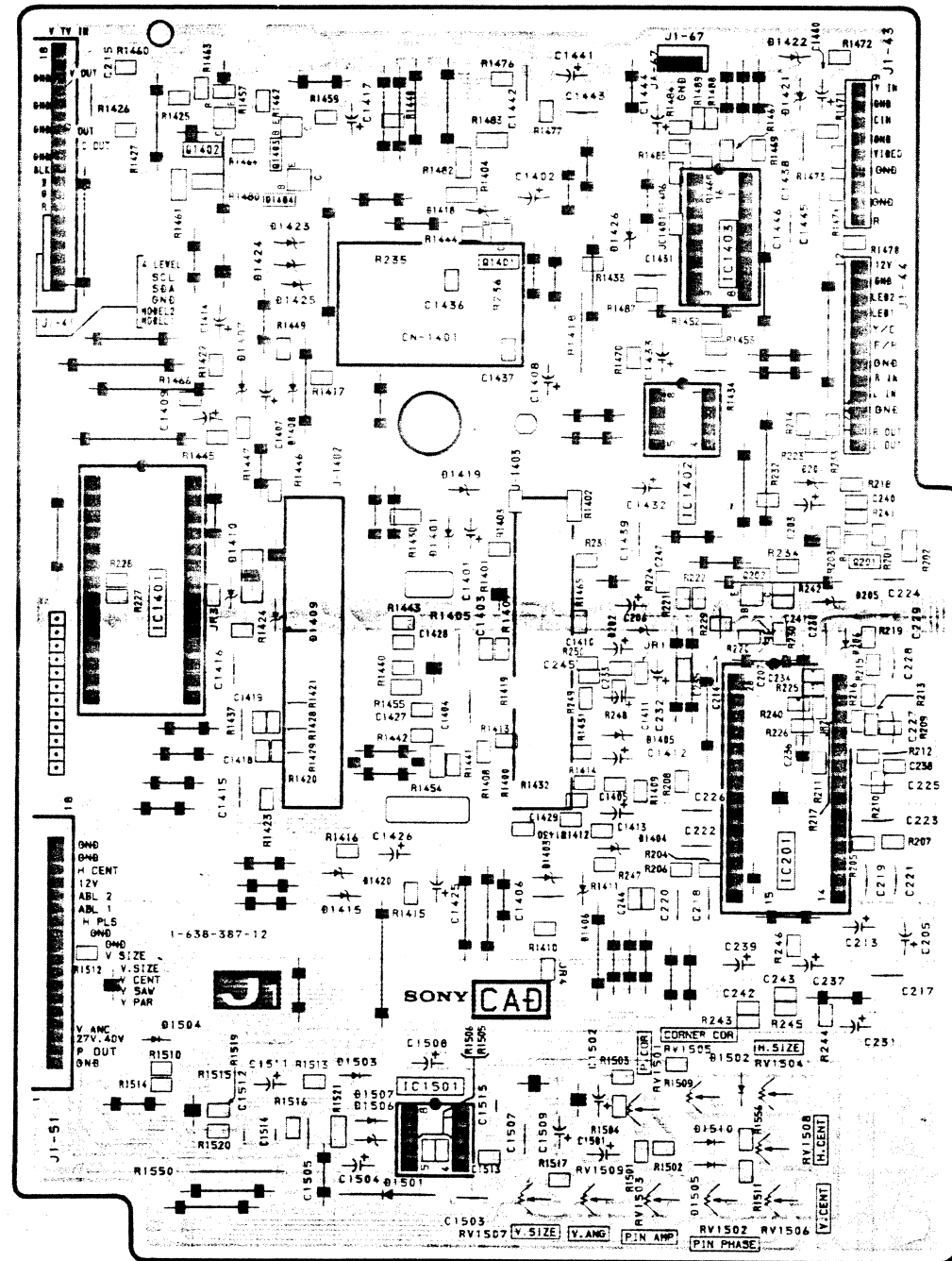
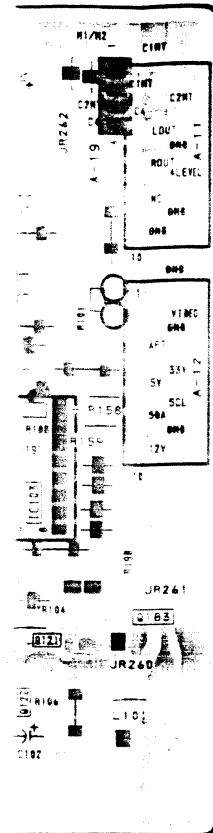
— A Board —



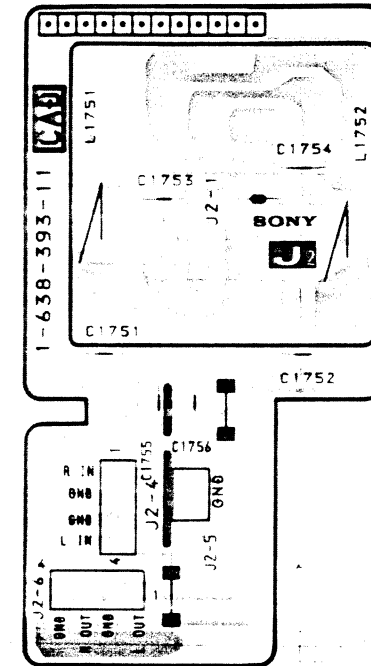
— F Board —



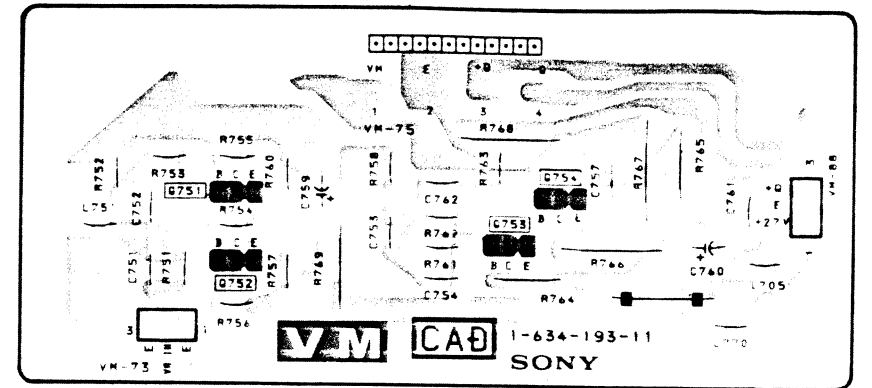
-J1 Board-



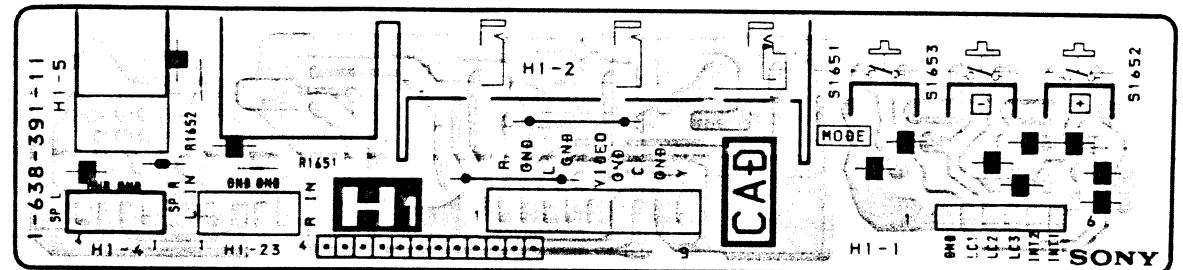
-J2 Board-



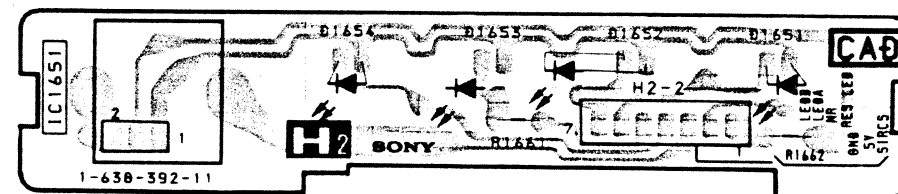
-VM BOARD- (KV-C2951D ONLY)



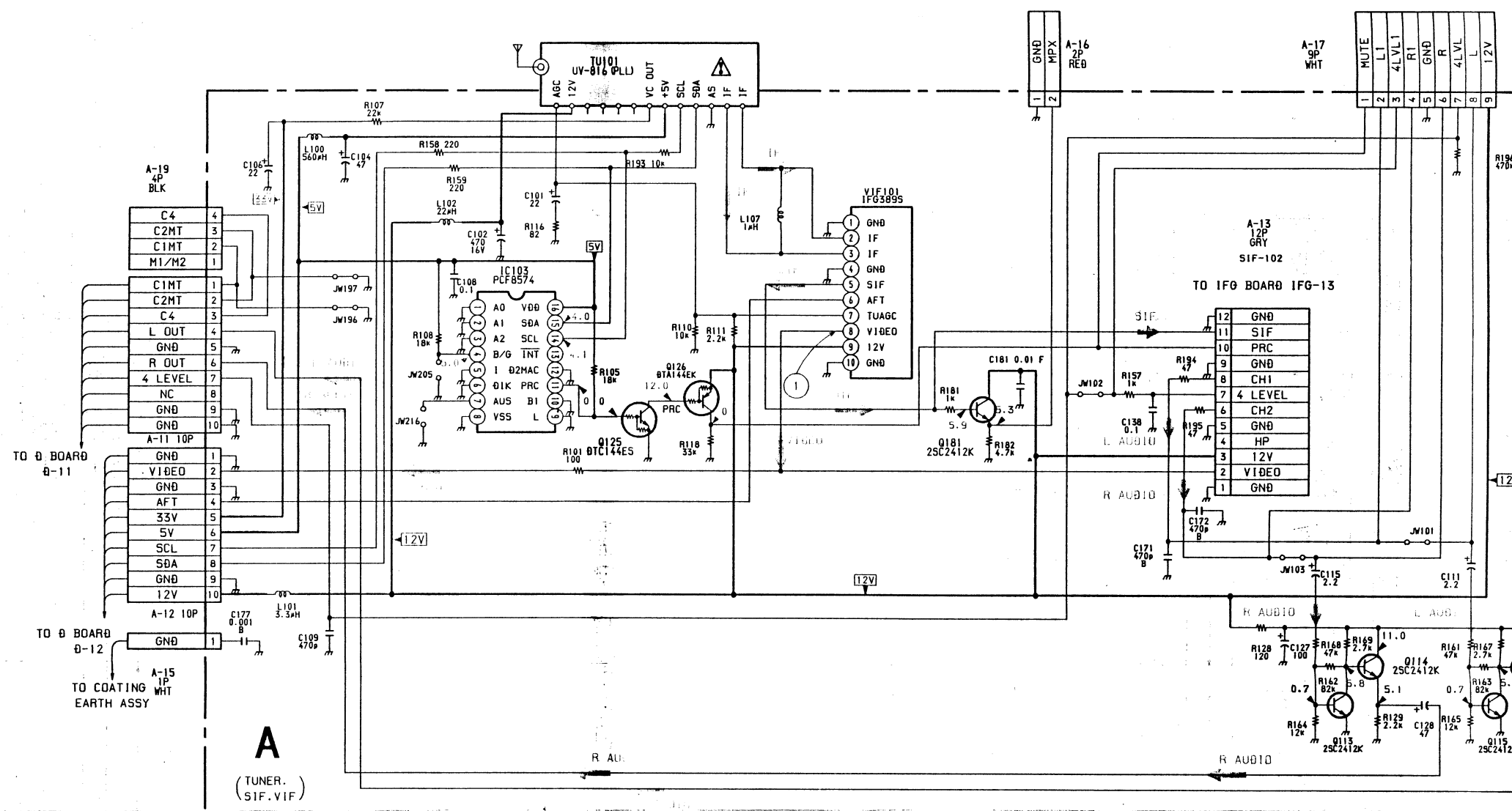
-H1 Board-



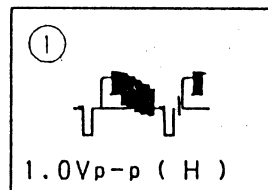
-H2 Board-



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O

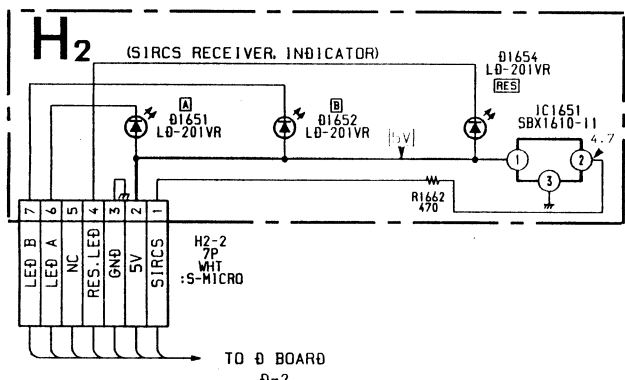
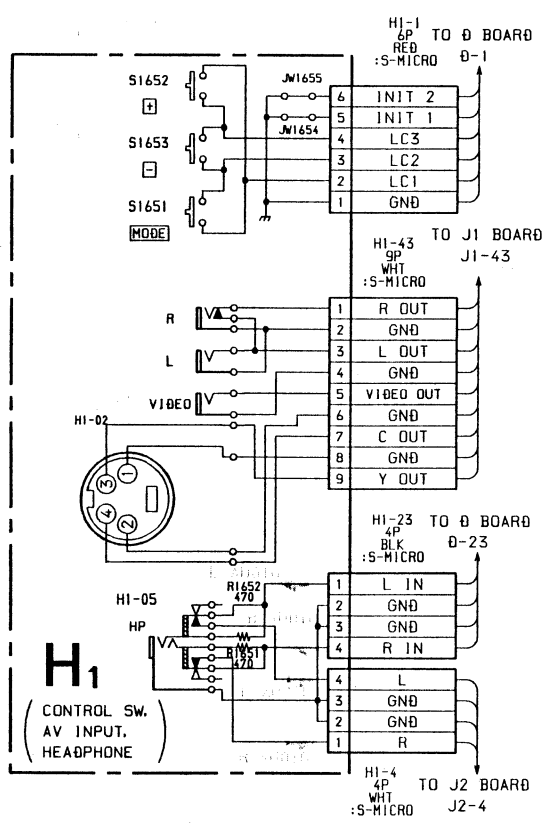


• WAVEFORMS A BOARD



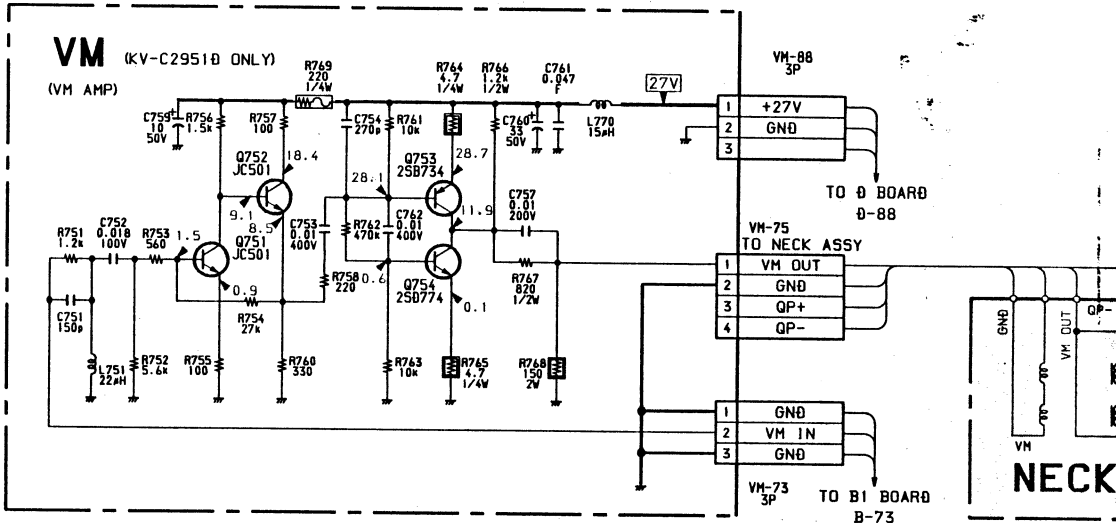
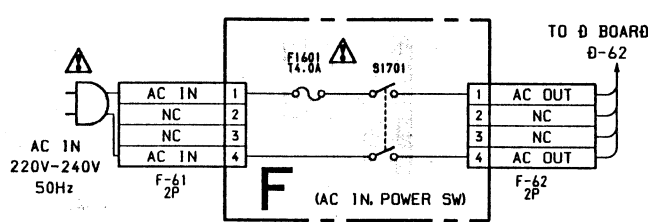
• A BOARD

IC103	PCF8574	EXPAN
Q113	25C2412K	AUD10
Q114	25C2412K	AUD10
Q115	25C2412K	AUD10
Q116	25C2412K	AUD10
Q125	0TC144ES	MUTE S
Q126	0TA144EK	MUTE S
Q181	25C2412K	NICAM



• H2 BOARD

IC1651	SBX1610-11	INFRARED RECIVER
01651	L0-201VR	AUDIO CHANNEL A INDICATOR
01652	L0-201VR	AUDIO CHANNEL B INDICATOR
01654	L0-201VR	RESET



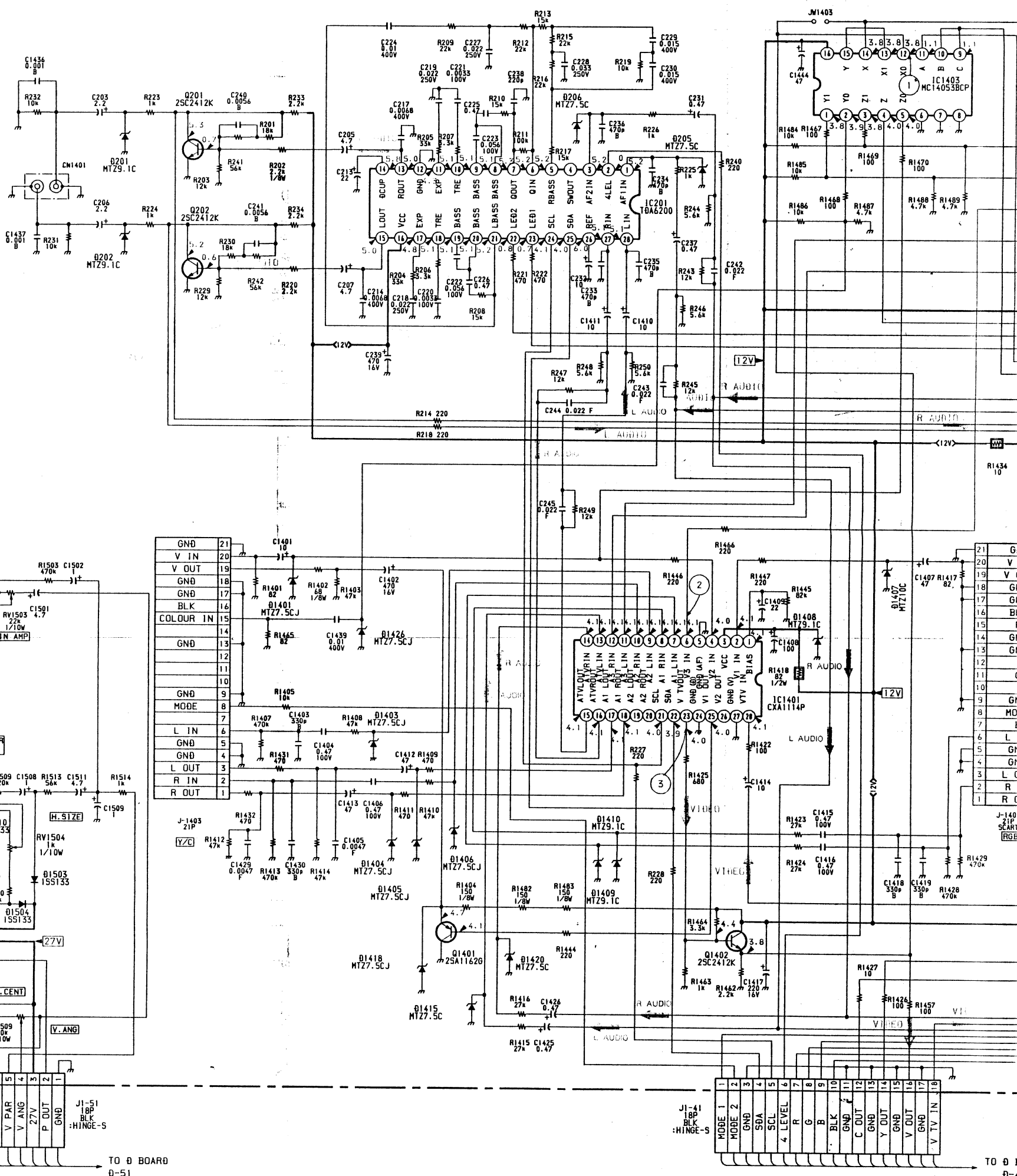
• VM BOARD (KV-C2951D ONLY)

Q751	JC501	REF AMP
Q752	JC501	REF AMP
Q753	25B734	PUSH-PULL OUT
Q754	25B774	PUSH-PULL OUT

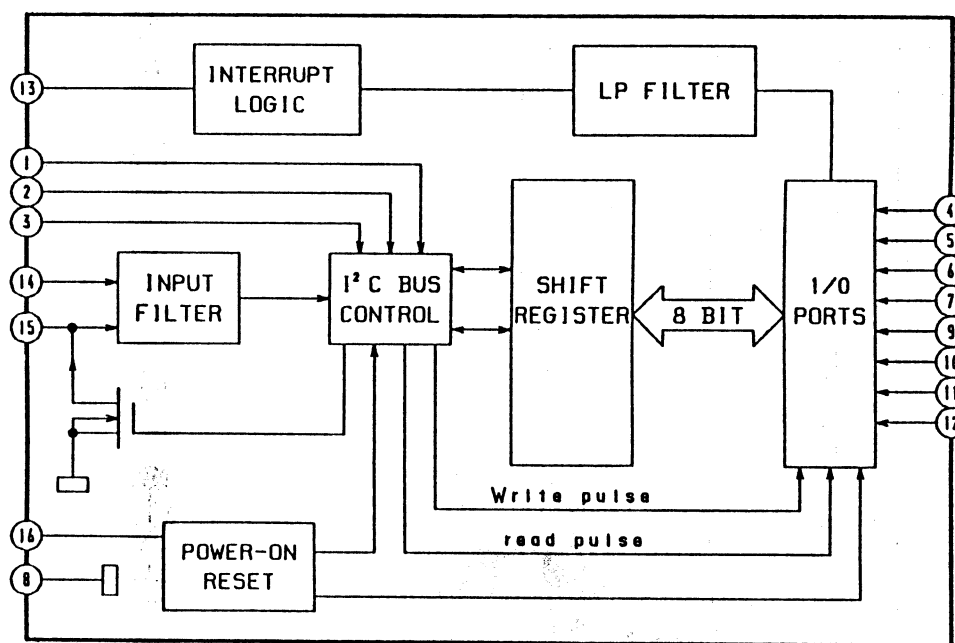


**J<sub>1</sub>**

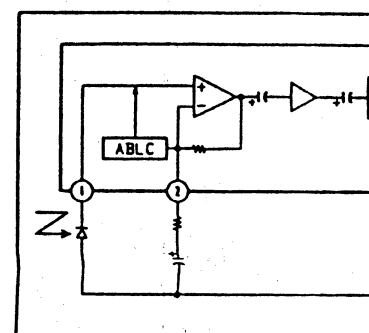
AUDIO CONTROL.  
AV INPUT, Y/C INPUT.  
SCART VIDEO OUT.  
EAST-WEST CORRECTION

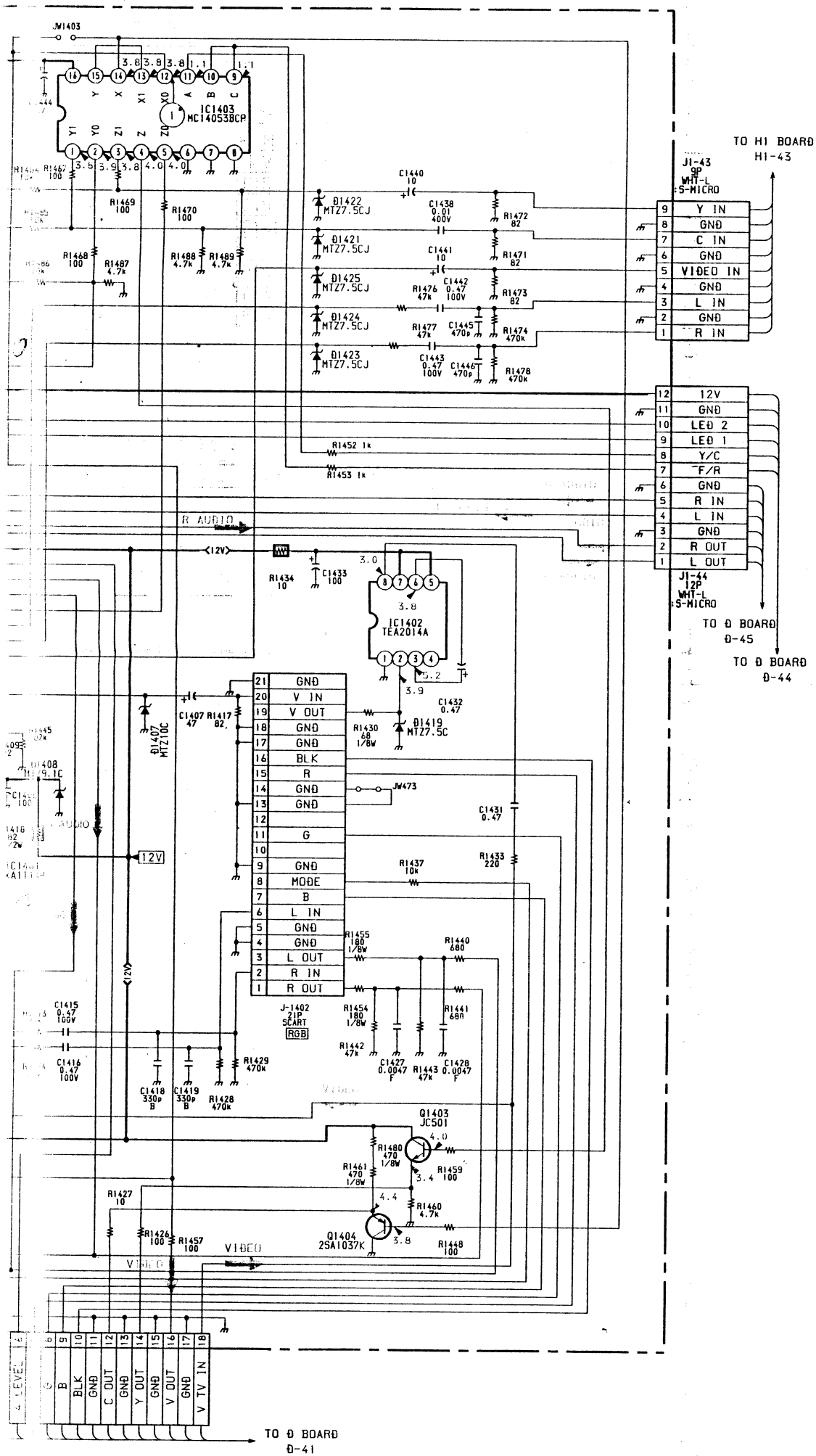


A BOARD IC103 PCF8574



H2 BOARD IC1651 SBX1610





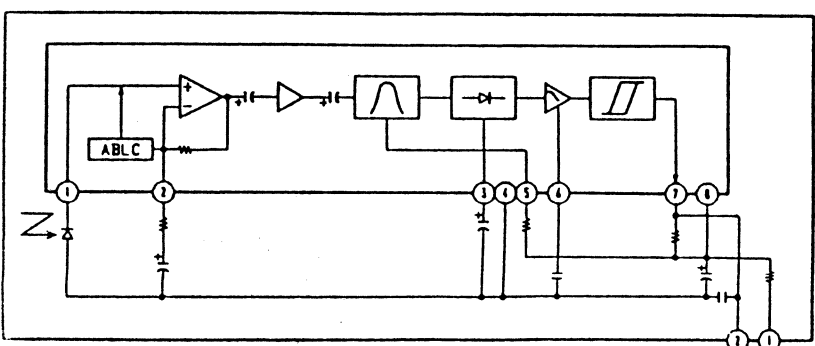
• J1 BOARD

\* MARK

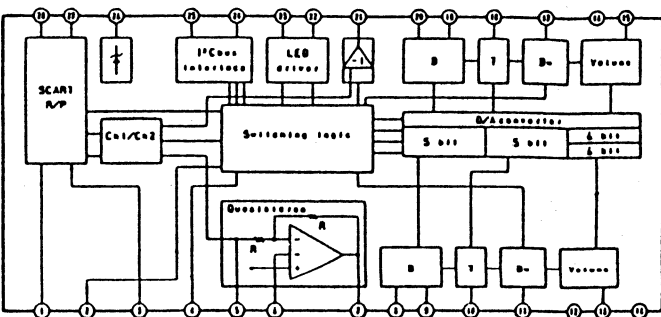
KV-C2551D	KV-C2951D
C1512 0.0068 400V	C1512
C1514 0.022 250V	C1514
C1515 820P	C1515
R1515 680K	R1515
R1520 470K	R1520 390K
R1550 JW	R1550 1 1W :RS

NOT MOUNTED

H2 BOARD IC1651 SBX1610-11



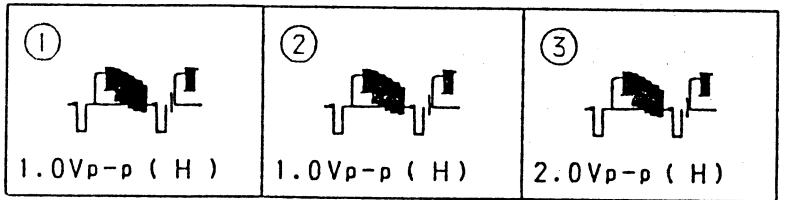
J1 BOARD IC201 TDA6200



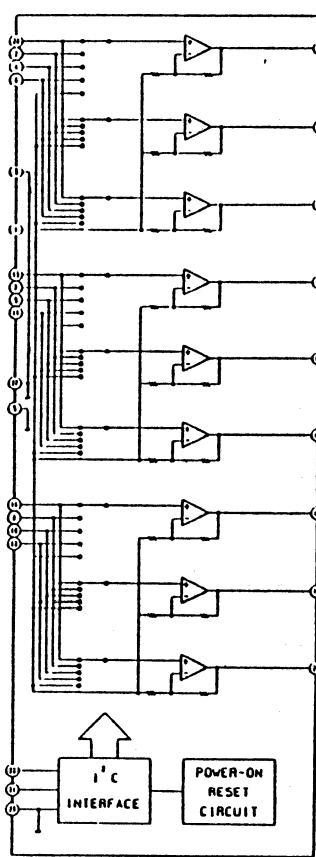
• J1 BOARD

IC201	TDA6200	AUDIO CONTROL
IC1401	CXA1114P	AV SW
IC1402	TEA2014A	SCART VIDEO OUT
IC1403	MC14053BCP	COMPOSITE Y/C SW
IC1501	TEA2031A	EAST-WEST CORRECTION
Q201	2SC2412K	AUDIO R BUFF
Q202	2SC2412K	AUDIO L BUFF
Q1401	2SA1037K	VIDEO OUT
Q1402	2SC2412K	VIDEO OUT BUFF
Q1403	2SC2412K	Y OUT BUFF
Q1404	2SA1037K	C OUT BUFF
Q201	MTZJ-T-77-9.1C	PROTECT
Q202	MTZJ-T-77-9.1C	PROTECT
Q205	MTZJ-T-77-7.5C	PROTECT
Q206	MTZJ-T-77-7.5C	PROTECT
Q1401	MTZJ-T-77-7.5C	PROTECT
Q1403	MTZJ-T-77-7.5C	PROTECT
Q1404	MTZJ-T-77-7.5C	PROTECT
Q1405	MTZJ-T-77-7.5C	PROTECT
Q1406	MTZJ-T-77-7.5C	PROTECT
Q1407	MTZJ-T-77-10C	PROTECT
Q1408	MTZJ-T-77-9.1C	REG
Q1409	MTZJ-T-77-9.1C	PROTECT
Q1410	MTZJ-T-77-9.1C	PROTECT
Q1415	MTZJ-T-77-7.5C	PROTECT
Q1418	MTZJ-T-77-7.5C	PROTECT
Q1419	MTZJ-T-77-7.5C	PROTECT
Q1420	MTZJ-T-77-7.5C	PROTECT
Q1421	MTZJ-T-77-7.5C	PROTECT
Q1422	MTZJ-T-77-7.5C	PROTECT
Q1423	MTZJ-T-77-7.5C	PROTECT
Q1424	MTZJ-T-77-7.5C	PROTECT
Q1425	MTZJ-T-77-7.5C	PROTECT
Q1426	MTZJ-T-77-7.5C	PROTECT
Q1501	RGP10G	PROTECT
Q1502	ISS133	DECOUPLING H SIZE
Q1503	ISS133	CLIPPING V PARABORA
Q1504	ISS133	CLIPPING H PULSE
Q1505	ISS133	REG
Q1506	MTZJ-T-77-36D	PROTECT
Q1507	ISS133	PROTECT
Q1510	ISS133	REG

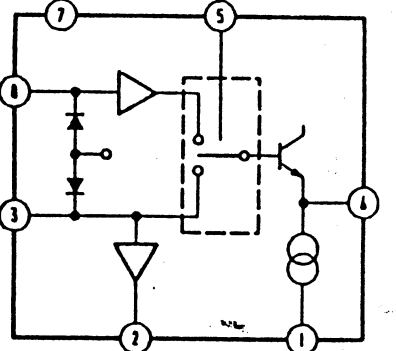
• WAVEFORMS J1 BOARD



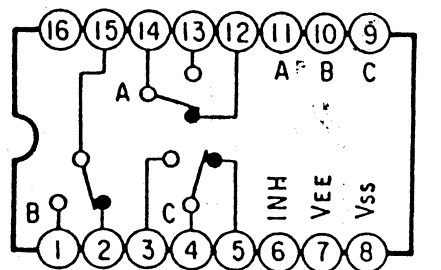
J1 BOARD IC1401 CXA1114P



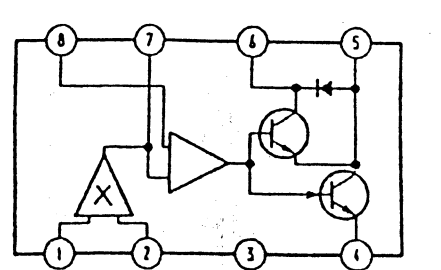
J1 BOARD IC1402 TEA2014A



J1 BOARD IC1403 MC14053BCP



J1 BOARD IC1501 TEA2031A





• WAVEFORMS B1 BOARD

① PAL  5.4Vp-p (H)	① SECAM  4.8Vp-p (H)	① NTSC3.58/ NTSC4.43  5.6Vp-p (H)	② PAL  5.4Vp-p (H)
② SECAM  4.8Vp-p (H)	② NTSC3.58/ NTSC4.43  5.6Vp-p (H)	③ PAL  5.4Vp-p (H)	③ SECAM  5.0Vp-p (H)
③ NTSC3.58/ NTSC4.43  6.2Vp-p (H)	④  10.5Vp-p (H)	⑤ PAL  0.4Vp-p (H)	⑤ SECAM  0.3Vp-p (H)
⑤ NTSC3.58/ NTSC4.43  0.6Vp-p (H)	⑥ PAL/SECAM  1.1Vp-p (H)	⑥ NTSC3.58/ NTSC4.43  1.2Vp-p (H)	⑦ PAL/SECAM  1.4Vp-p (H)
⑦ NTSC3.58/ NTSC4.43  1.4Vp-p (H)	⑧ PAL  0.4Vp-p (H)	⑧ SECAM  1.0Vp-p (H)	⑧ NTSC3.58/ NTSC4.43  0.8Vp-p (H)
⑨ PAL  0.7Vp-p (H)	⑨ SECAM  1.4Vp-p (H)	⑨ NTSC3.58/ NTSC4.43  0.85Vp-p (H)	⑩ SECAM  0.2Vp-p (H)
⑪ SECAM  1.2Vp-p (H)	⑫ PAL  0.16Vp-p (H)	⑫ SECAM  0.2Vp-p (H)	⑫ NTSC3.58/ NTSC4.43  0.3Vp-p (H)
⑬ PAL  1.0Vp-p (H)	⑬ SECAM  0.8Vp-p (H)	⑬ NTSC3.58  0.9Vp-p (H)	⑬ NTSC4.43  0.95Vp-p (H)
⑭ PAL  0.8Vp-p (H)	⑭ SECAM  0.7Vp-p (H)	⑭ NTSC3.58  0.6Vp-p (H)	⑭ NTSC4.43  0.8Vp-p (H)
⑮ PAL  0.7Vp-p (H)	⑮ SECAM NTSC3.58 NTSC4.43  0.5Vp-p (H)	⑯  0.9Vp-p (H)	⑰ PAL  1.9Vp-p (H)
⑰ SECAM NTSC3.58 NTSC4.43  0.1Vp-p (H)	⑱ PAL  0.2Vp-p (H)	⑱ SECAM  0.8Vp-p (H)	⑲ PAL  0.6Vp-p (H)
⑲ SECAM  0.8Vp-p (H)	⑲ NTSC3.58/ NTSC4.43  0.9Vp-p (H)		

As to the voltage value shown by the mark ※ on the Schematic Diagram, see the another list.

IC-NO	PIN-NO	PAL	SECAM	NTSC 3.38	NTSC 4.43
IC301	(5)	6.7	4.8	4.8	4.8
	(15)	8.9	7.0	7.0	7.0
	(19)	3.4	3.4	3.8	3.4
	(16)	6.6	6.6	6.0	6.3
	(1)	0.1	6.8	6.9	6.8
IC304	(5)	9.9	0	9.9	9.9
	(7)	4.6	0	4.6	4.6
	(8)	3.4	3.0	3.4	3.4
	(9)	3.4	3.0	3.4	3.4
	(10)	4.6	3.4	4.6	4.6
	(11)	2.3	3.1	3.1	2.3
	(12)	5.6	5.6	5.6	7.4
	(13)	7.5	7.5	5.7	5.7
	(25)	0.1	0.1	0.1	6.0
	(26)	0.1	0.1	6.0	0.1
	(27)	0.1	6.0	0.1	0.1
	(28)	6.0	0.1	0.1	0.1

Q-NO		PAL	SECAM	NTSC 3.38	NTSC 4.43
Q338	B	2.4	3.9	3.9	3.9
	E	3.0	4.6	4.6	4.6
Q339	B	3.0	4.6	4.6	4.6
	E	2.4	3.9	3.9	3.9
Q341	B	0	0.6	0.4	0.1
	C	11.6	0	11.6	11.6
Q342	B	0	0	0.4	0
	C	11.7	0	11.7	11.7
Q343	B	3.4	5.4	5.3	5.3
	E	2.8	4.7	4.7	4.7
Q344	B	0	5.4	1.0	0.1
	E	4.4	4.8	1.5	4.5
Q345	B	5.0	0.1	1.9	5.0
	E	4.4	4.4	1.4	4.4
Q347	B	0.6	0	0	0
	C	0.1	11.9	11.9	11.9
Q348	B	0.1	0.1	1.0	0.1
	C	1.3	0.2	0.2	0.4

• B1 BOARD

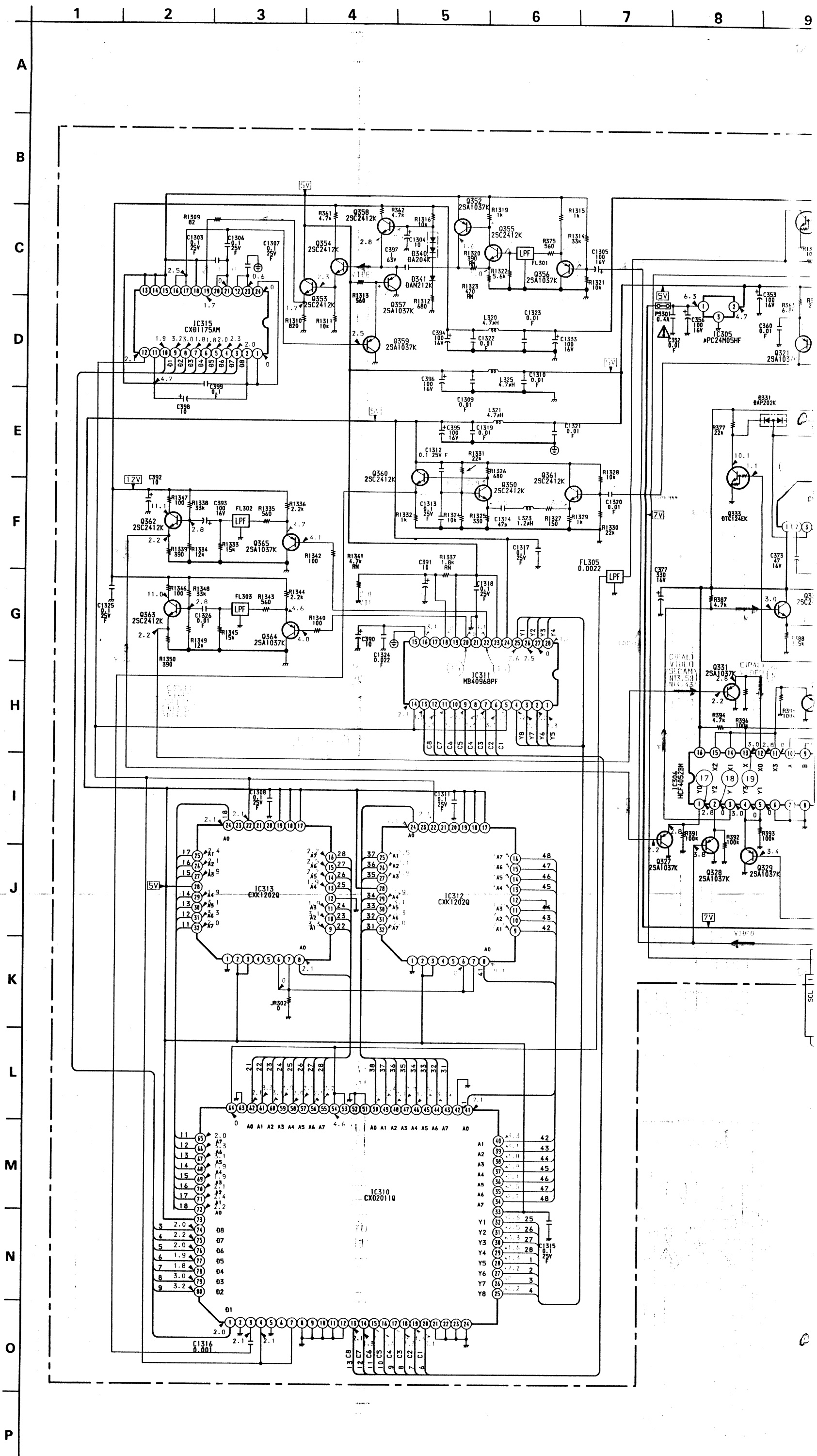
IC301	TDA4580-V6	VIDEO PROCESSOR
IC302	TDA8442-N3	D/A CONVERTER
IC303	TDA4660T	1H DELAY
IC304	TDA4650WP	COLOR PROCESSOR
IC305	μPC24M05HF	REGULATOR
IC306	HCF4052BM	Y/C SW
IC308	CX20061	Y INTERRUPT
IC310	CX02011Q	COMB CONTROL
IC311	MB40968PF	D/A CONVERTER
IC312	CXK1202Q	MEMORY
IC313	CXK1202Q	MEMORY
IC315	CX01175AM	A/D CONVERTER
Q301	25C2412K	CANAL +BLK
Q302	25C2412K	ON SCREEN DISPLAY SW
Q303	25C2412K	FAS PICTURE MUTE SW
Q304	25C2412K	ON SCREEN DISPLAY SW
Q305	0TA144EK	ANIT PRIORITY SCART
Q306	25C2412K	STBY SW
Q307	25C2412K	ABL
Q308	0TC124EK	MUTE
Q310	0TC124EK	SECAM SW
Q311	0TC124EK	SECAM SW
Q320	25C2412K	HUE BUFFER
Q321	2SA1037K	CLK AMP3
Q322	2SA1037K	CLK AMP2
Q323	25C2412K	CLK AMP1
Q324	25C2412K	CLK BUFFER
Q327	2SA1037K	Y OUT
Q328	2SA1037K	VIDEO IN
Q329	2SA1037K	Y IN
Q330	25C2412K	VIDEO BUFFER
Q331	2SA1037K	C OUT
Q332	2SA1037K	C IN
Q333	0TC124EK	Y/C SW
Q334	0TC124EK	Y SW
Q335	25C2412K	SECAM SW
Q336	25C2412K	NTSC (3.58) SW
Q337	25C2412K	NTSC (4.43) SW
Q338	2SA1037K	Y BUFFER
Q339	25C2412K	Y BUFFER
Q340	25C2412K	Y BUFFER
Q341	25C2412K	SECAM TRAP SW
Q342	25C2412K	NTSC TRAP SW
Q343	25C2412K	C OUT
Q344	25C2412K	SECAM SW
Q345	25C2412K	PAL/SECAM SW
Q346	25C2412K	Y IN
Q347	25C2412K	PAL SW
Q348	0TC124EK	NTSC (3.58) SW
Q350	25C2412K	CLK AMP
Q352	2SA1037K	VIDEO AMP
Q353	25C2412K	BUFFER
Q354	25C2412K	BUFFER
Q355	25C2412K	VIDEO AMP
Q356	2SA1037K	VIDEO BUFFER
Q357	2SA1037K	CLAMP BIAS
Q358	25C2412K	VIDEO CLAMP
Q359	2SA1037K	CLAMP BIAS
Q360	25C2412K	CLK BUFFER
Q361	25C2412K	CLK AMP
Q362	25C2412K	Y BUFFER
Q363	25C2412K	C BUFFER
Q364	2SA1037K	C BUFFER
Q365	2SA1037K	Y BUFFER
Q366	25C2412K	SHP BUFFER
Q367	25C2412K	Y BUFFER
Q368	25C2412K	SHP AMP
Q369	25C2412K	SHP AMP
Q370	25C2412K	SHP AMP
Q371	25C2412K	VM BUFFER
Q372	25C2412K	VM AMP
Q373	0TC124EK	SYSTEM SW
Q1301	0TC124EK	Y BUFFER
Q1302	25C2412K	Y BUFFER
Q1303	0TC124EK	VM MUTE
0301	1MN10	ACO AT STBY
0304	0AN212K	PROTECT
0305	0AN212K	PROTECT
0307	MA3110M	PROTECT
0308	0AN212K	PROTECT
0309	0AN212K	PROTECT
0310	MA3110M	PROTECT
0311	MA3110M	PROTECT
0312	MA3110M	PROTECT
0314	0A204K	PROTECT
0318	0A204K	PROTECT
0319	0A204K	PROTECT
0320	0A204K	PROTECT
0321	MA3056	REG
0322	0AN202K	PROTECT
0330	0AN212K	BIAS
0331	0AP202K	Y/C SW
0333	1MN10	SYSTEM SW
0336	0AN202K	CORRECT SW
0340	0A204K	VIDEO AMP
0341	0AN212K	VIDEO AMP

• B1 BOARD

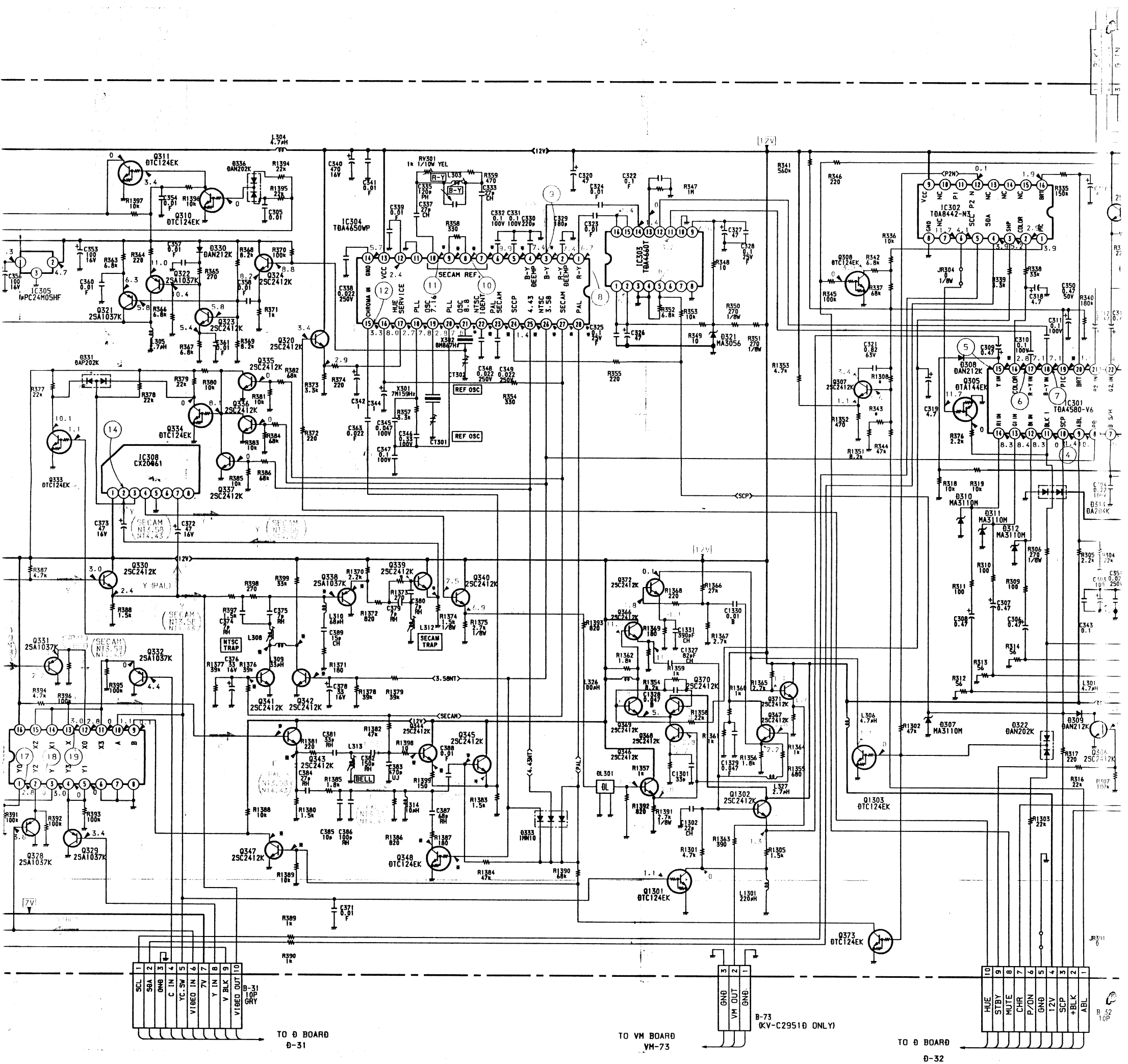
\* MARK

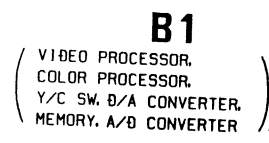
KV-C2551D	KV-C2951D
R343 560 1/10W	R343 2.2k 1/10W
R1308 0 1/10W	R1308 4.7k 1/10W
B-73 OPEN	B-73 3P

KV-C2951D
343 2.2k 1/10W
1308 4.7K 1/10W
-73 3P







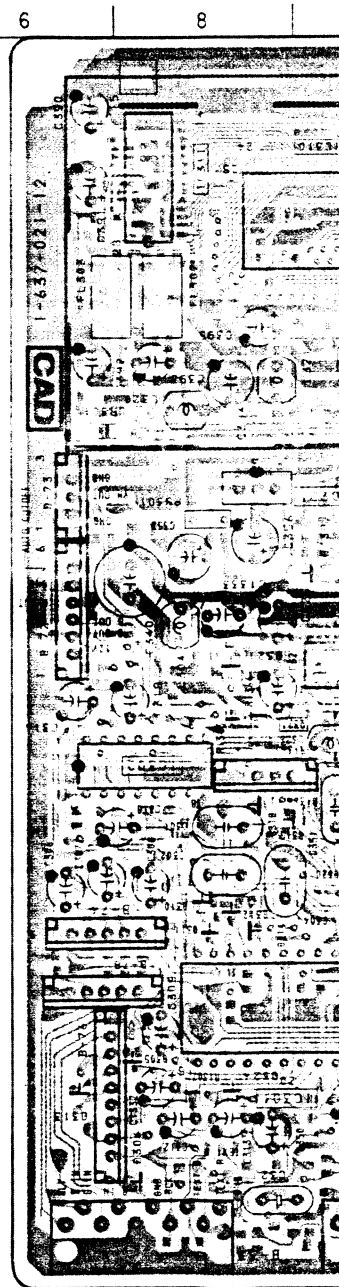
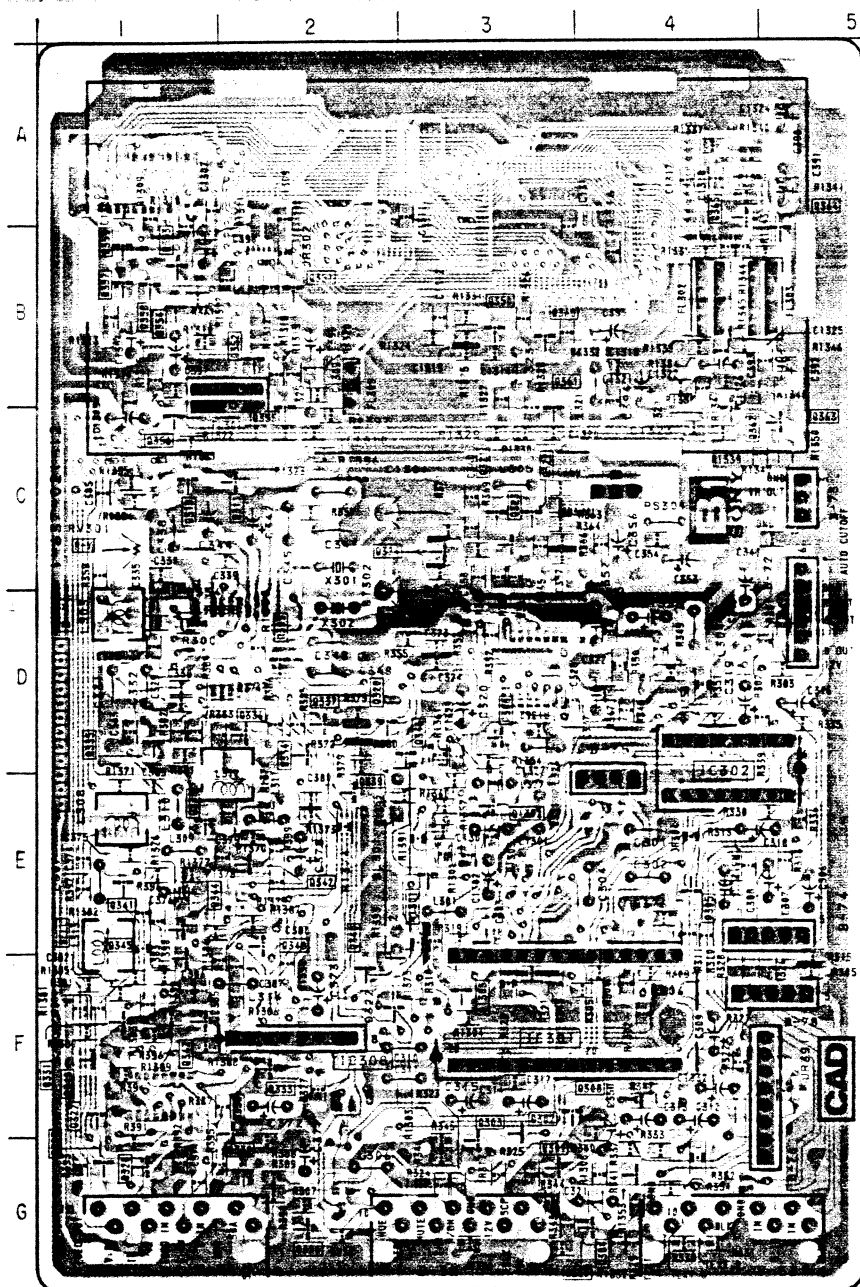


**B1**

VIDEO PROCESSOR, COLOR PROCESSOR,  
Y/C SW, D/A CONVERTER, MEMORY,  
CONVERTER

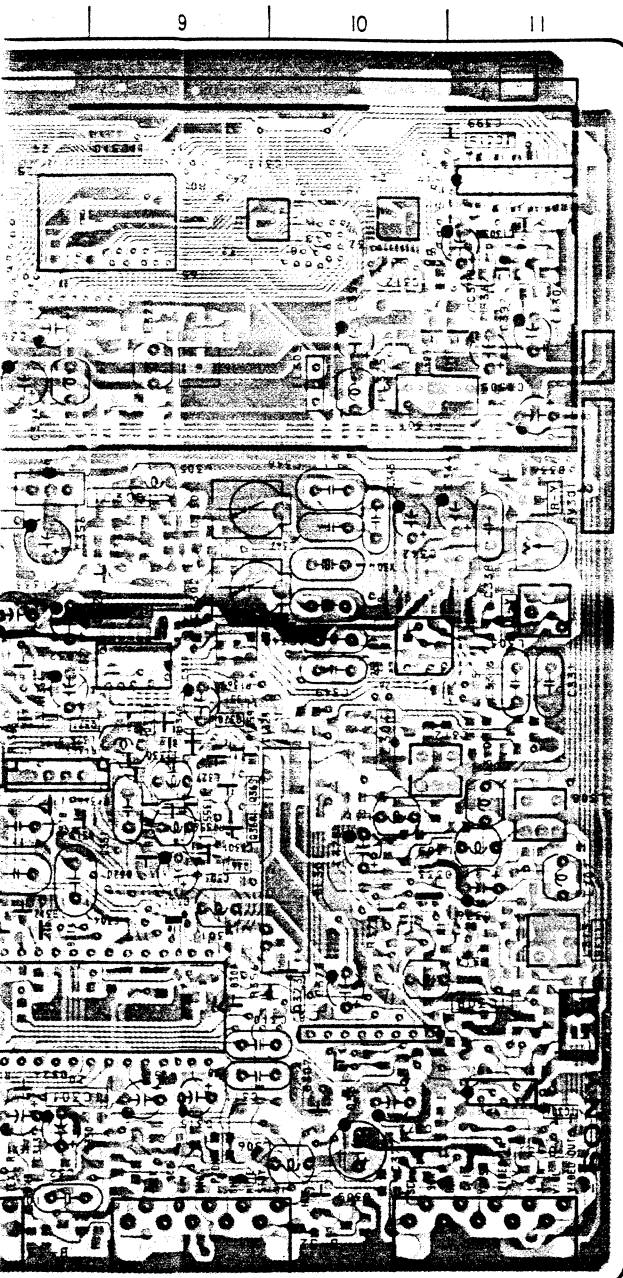
Note:

-B1 Board-



Note :

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



IC			
IC301	F-8	Q362	C-4
IC302	E-8	Q363	C-5
IC303	D-9	Q364	B-5
IC304	D-10	Q365	A-4
IC305	C-8	Q366	D-3
IC306	F-11	Q367	E-9
IC308	F-10	Q368	E-9
IC310	A-9	Q369	E-9
IC311	A-8	Q370	D-9
IC312	A-10	Q371	D-9
IC313	A-9	Q372	D-9
IC315	A-11	Q373	F-10
		Q1301	E-3
		Q1302	E-3
		Q1303	F-3

TRANSISTOR		DIODE	
Q301	G-3	D301	E-9
Q302	F-3	D304	G-8
Q303	F-3	D305	F-8
Q304	G-4	D307	F-10
Q305	E-4	D308	F-9
Q306	G-2	D309	G-10
Q307	G-4	D310	E-8
Q308	F-3	D311	E-8
Q310	C-1	D312	E-8
Q311	C-2	D314	E-8
Q320	D-2	D318	E-8
Q321	C-3	D319	E-8
Q322	C-3	D320	E-9
Q323	C-3	D321	D-8
Q324	C-3	D322	F-2
Q327	F-1	D330	D-9
Q328	G-1	D331	F-10
Q329	G-1	D333	E-10
Q330	F-2	D336	C-11
Q331	F-1	D340	B-10
Q332	G-2	D341	B-11
Q333	F-2		
Q334	D-2		
Q335	D-1		
Q336	D-2		
Q337	D-2		
Q338	E-1		
Q339	E-2		
Q340	F-2		
Q341	E-1		
Q342	E-2		
Q343	F-1		
Q344	E-1		
Q345	F-1		
Q346	D-3		
Q347	F-1		
Q348	E-2		
Q350	B-3		
Q352	B-2		
Q353	B-1		
Q354	B-1		
Q355	C-2		
Q356	C-1		
Q357	B-1		
Q358	B-1		
Q359	B-1		
Q360	B-3		
Q361	C-3		

VARIABLE RESISTOR	
RV301	C-11

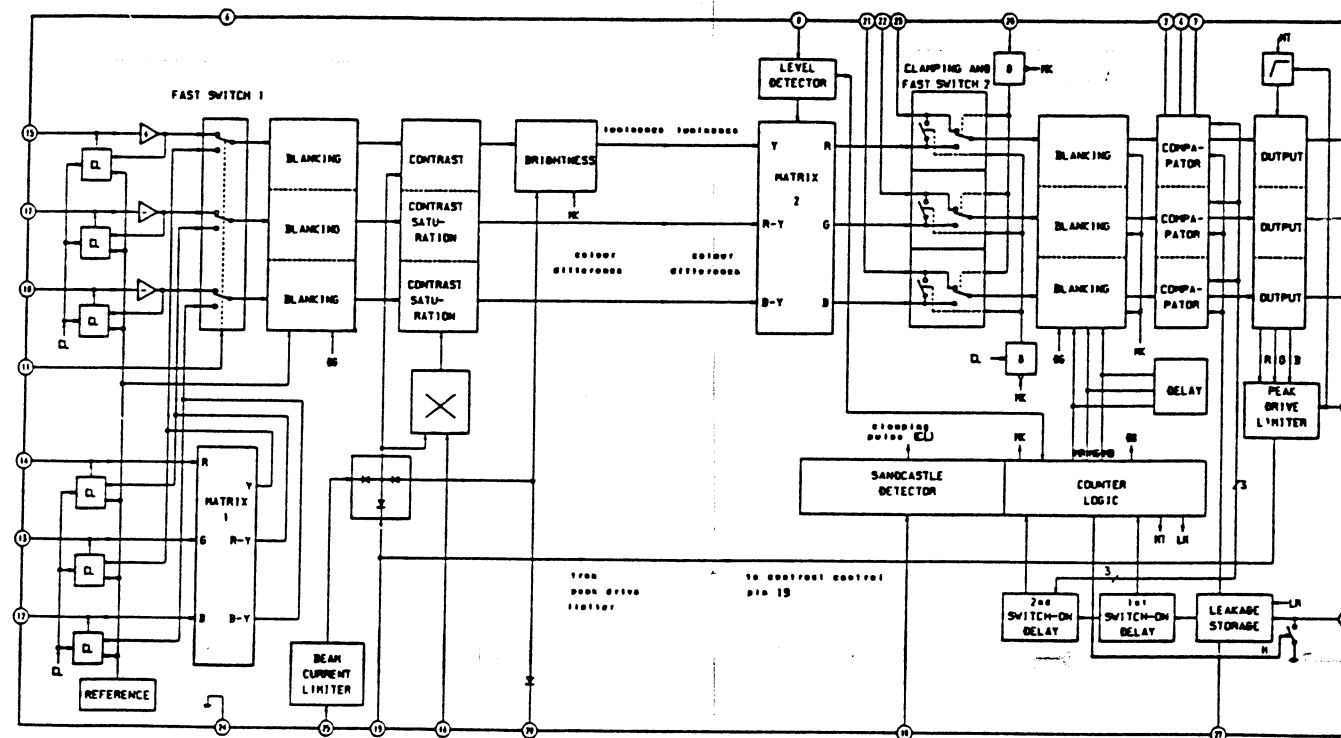
  

TRIMMER	
CT301	C-9
CT302	C-9

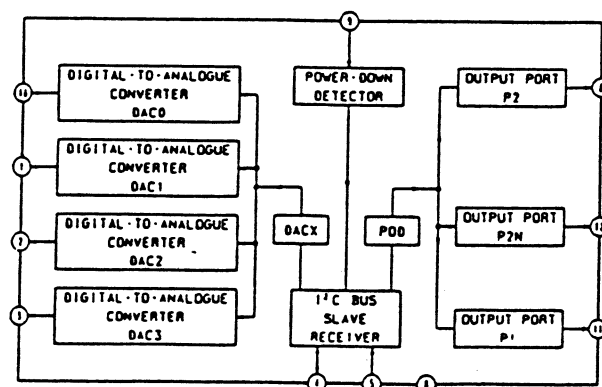
  

COIL	
L303	D-11
L308	E-11
L312	D-10
L313	E-11

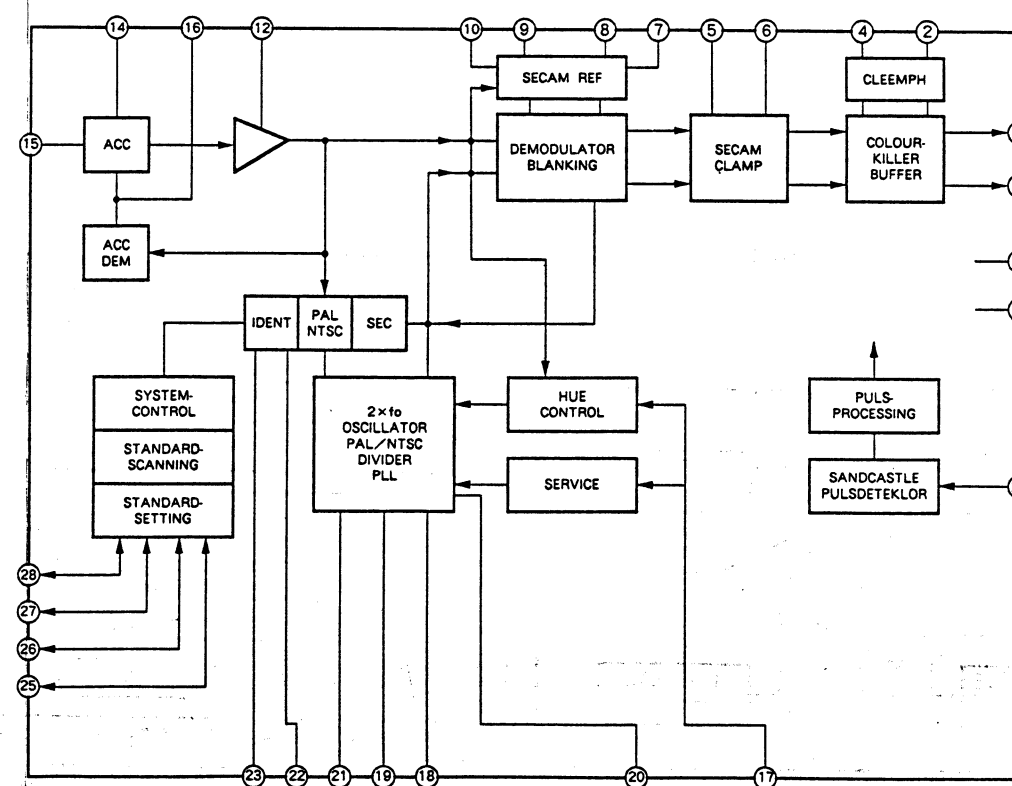
B1 BOARD IC301 TDA4580-V6



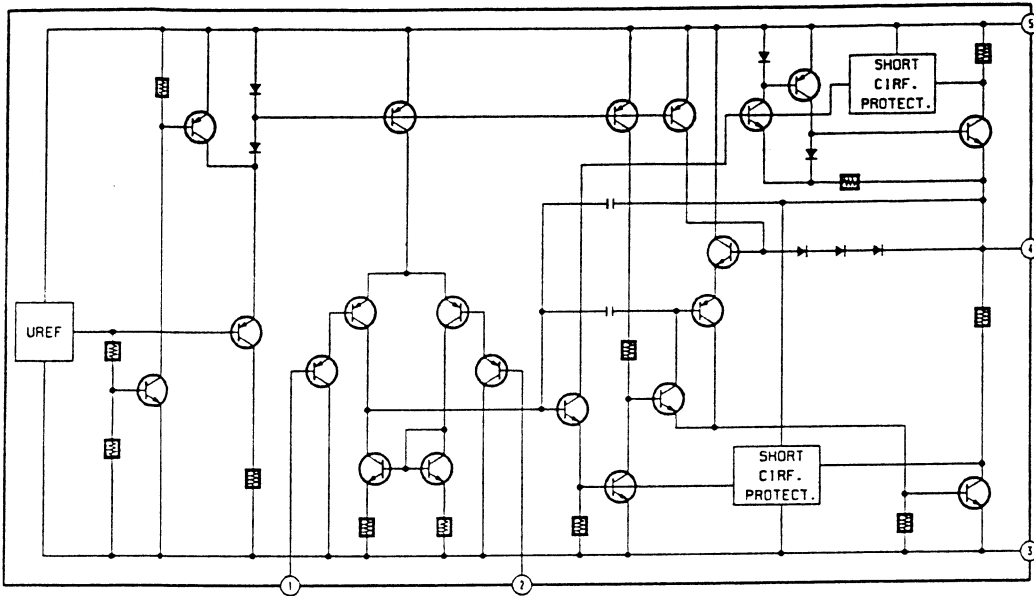
B1 BOARD IC302 TDA8442-N3



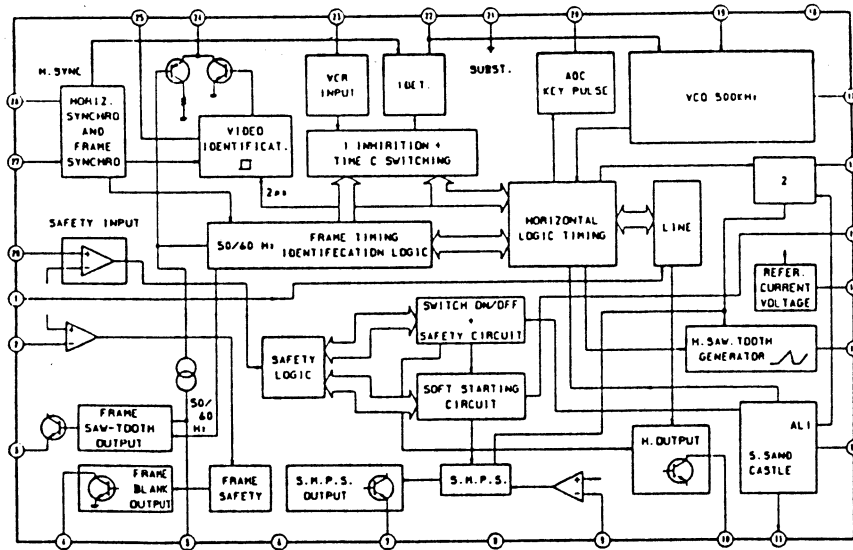
B1 BOARD IC303 TDA4660T



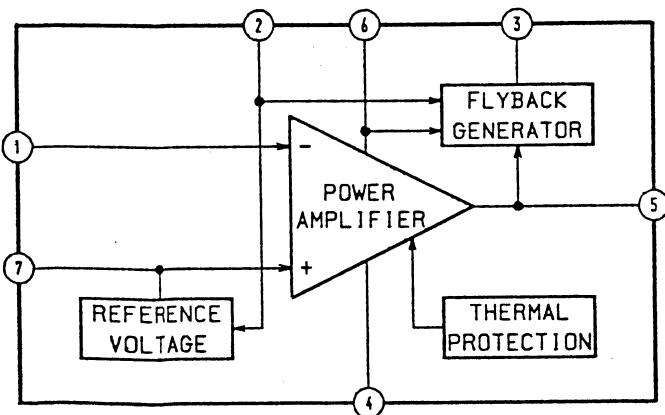
D BOARD IC251/261 TDA2050



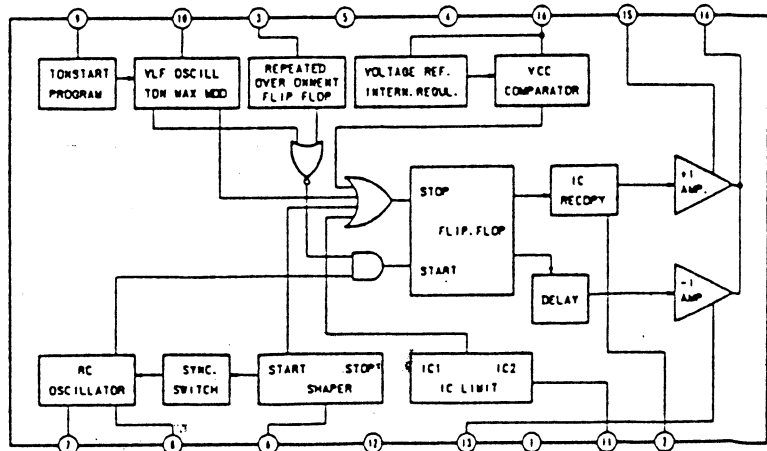
D BOARD IC501 TEA2028B



D BOARD IC502 TDA8170



D BOARD IC601 TEA2260





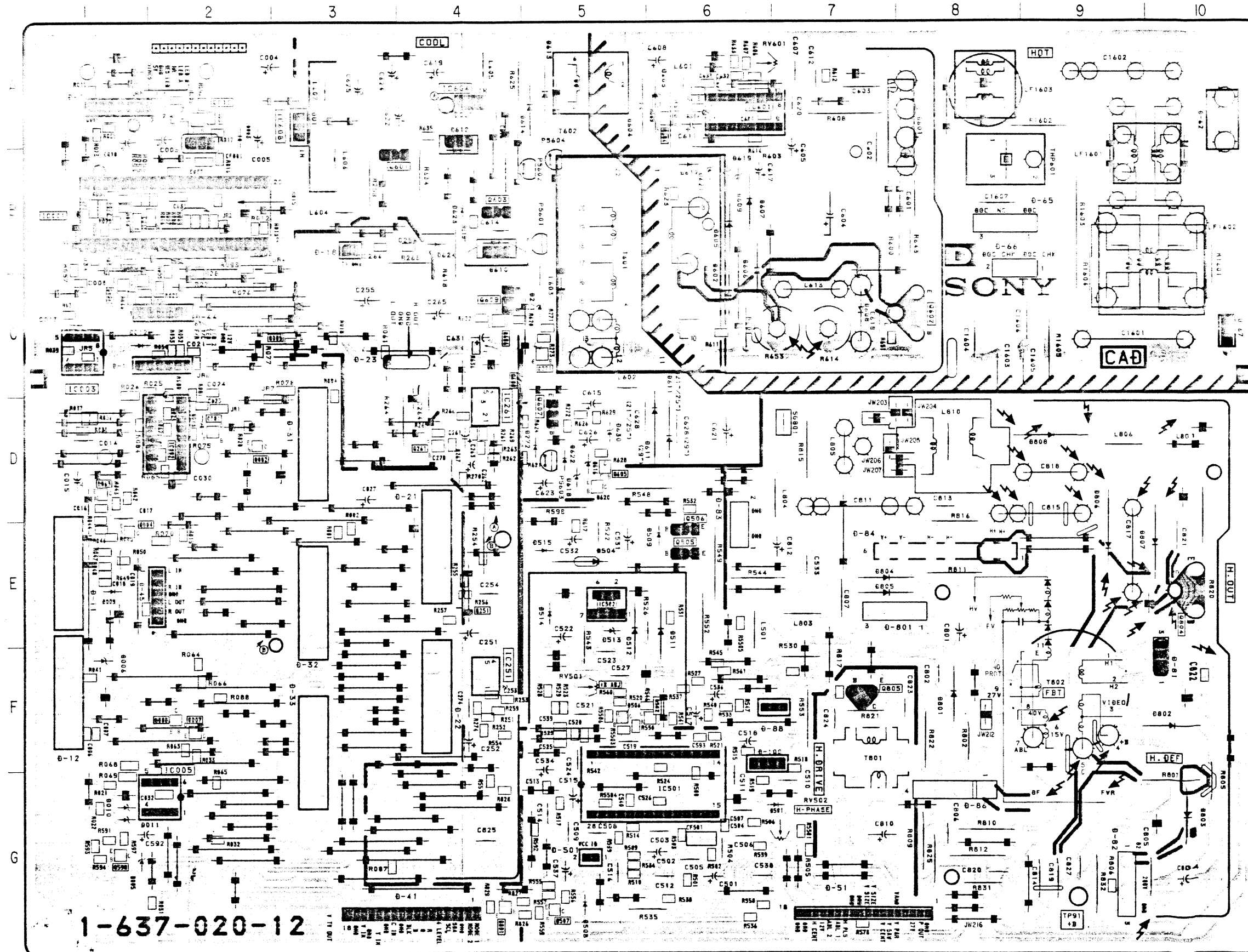
**D** [ TUNING CONTROL, POWER CONTROL, ]  
AUDIO OUT, H/V OUT



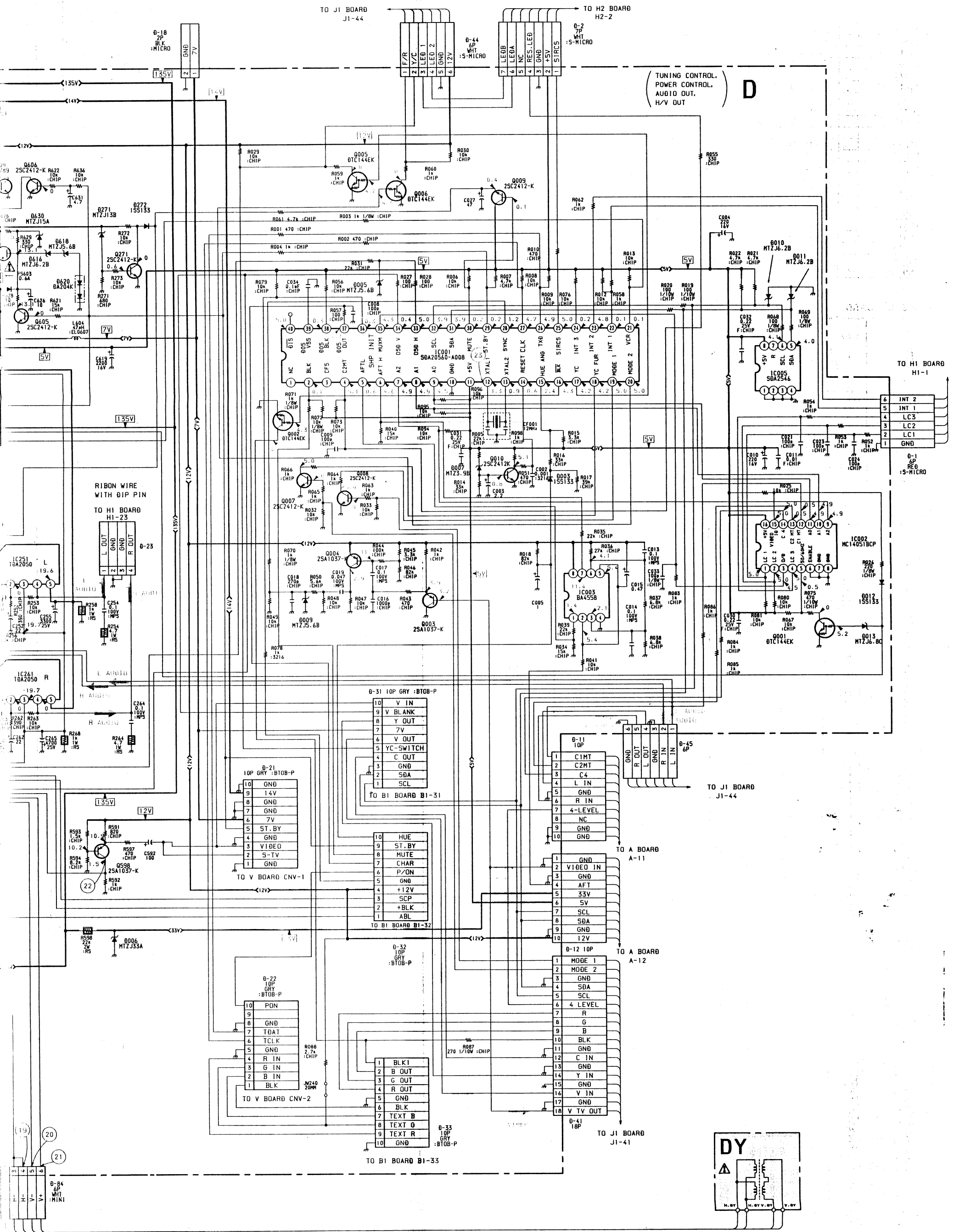
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

-D Board-

IC		D013	D-2
IC001	B-1	D271	C-5
IC002	D-2	D272	D-5
IC003	C-1	D501	G-6
IC005	G-2	D504	E-5
IC251	F-4	D506	F-5
IC261	D-4	D508	G-5
IC501	G-6	D509	E-6
IC502	E-5	D511	E-6
IC601	A-5	D512	E-5
IC604	A-4	D513	E-5
IC608	A-3	D514	E-5
		D515	E-5
		D601	A-8
		D602	C-6
		D603	A-6
		D604	D-5
		D605	B-6
		D606	B-6
		D607	B-6
		D608	C-7
		D609	B-6
		D610	B-4
		D611	D-6
		D612	A-4
		D613	A-5
		D614	A-5
		D616	D-5
		D617	B-6
		D618	D-5
		D619	B-6
		D620	D-5
		D621	B-6
		D622	D-5
		D623	B-4
		D624	B-4
		D630	D-5
		D801	F-8
		D802	F-10
		D803	G-10
		D804	E-7
		D805	E-7
		D806	E-9
		D808	D-9
TRANSISTOR			
Q001	D-2		
Q002	D-2		
Q003	D-1		
Q004	E-1		
Q005	C-1		
Q006	C-1		
Q007	F-2		
Q008	F-2		
Q009	C-3		
Q010	A-2		
Q251	E-4		
Q261	D-4		
Q271	C-5		
Q502	F-5		
Q505	E-6		
Q506	E-6		
Q507	G-5		
Q598	G-1		
Q601	B-3		
Q602	B-8		
Q603	B-4		
Q604	A-6		
Q605	D-5		
Q606	C-4		
Q607	D-5		
Q608	C-4		
Q609	C-4		
Q801	G-4		
Q804	E-10		
Q805	F-7		
		VARIABLE RESISTOR	
		RV501	F-5
		RV502	G-7
		RV601	A-7
DIODE		TP	
D003	A-2		
D005	G-1		
D006	F-1		
D007	A-2		
D009	E-1		
D010	G-1		
D011	G-1		
D012	C-1		
		TP91	G-9





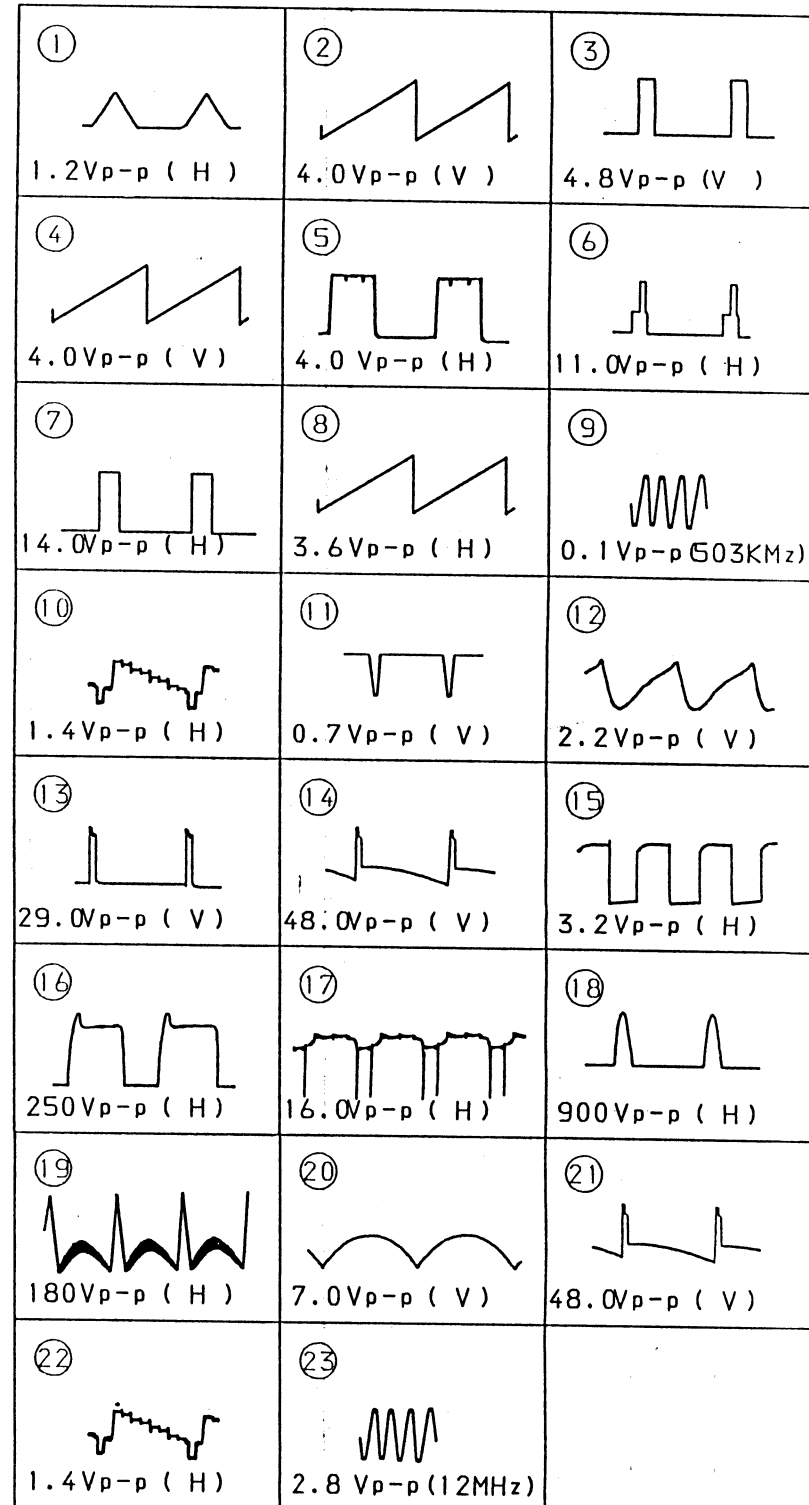




## • D BOARD

IC001	S0A20560-A008	TUNING CTL
IC002	MC14051BCP	ON SCREEN DISPLAY
IC003	BA4558	AFT COMPARETORE
IC005	S0A2546	MEMORY
IC251	T0A2050	AUDIO OUT (L)
IC261	T0A2050	AUDIO OUT (R)
IC501	TEA2028B	DEFLECTION PROCESSOR
IC502	T0A8170	V OUT
IC601	TEA2260	PRIMARY SMPS CTL
IC604	TEA7605	+5V REG
IC608	TYA7812CT	+12V REG
Q001	0TC144EK	50/60Hz SW
Q002	0TC144EK	BLK SW
Q003	2SA1037-K	SYNC SEPARATOR
Q004	2SA1037-K	SYNC SEPARATOR
Q005	0TC144EK	Y/C SW
Q006	0TC144EK	FRONT/REAR SW
Q007	2SC2412-K	MODE 2 SWITCH
Q008	2SC2412-K	MODE 1 SWITCH
Q009	2SC2412-K	MUTE SW
Q010	2SC2412-K	RESET
Q251	2SC2412-K	AUDIO MUTE
Q261	2SC2412-K	AUDIO MUTE
Q271	2SC2412-K	VOLTAGE DETECT
Q502	2SA1037-K	CONSTANT CURRENT SOURCE
Q505	2S0774-4	V CENT
Q506	2S0743-3	V CENT
Q507	2SA1037-K	CANAL +BLK
Q598	2SA1037-K	VIDEO AMP
Q601	2SB1357T114EF	STBY SW
Q602	2S01548	REG OUT
Q603	2SB1357T114EF	STBY SW
Q604	2SA1037-K	FAST ON/OFF
Q605	2SC2412-K	STBY SW
Q606	2SC2412-K	STBY SW
Q607	2S02096-EF	+12V REG
Q608	2SC2412-K	STBY SW
Q609	2S0789-3	STBY SW
Q801	2SC2412-K	ABL AMP
Q804	2S01941-06	H OUT
Q805	2SC2688	H DRIVER
0003	ISS133	HUE CTL
0005	MTZJ5.6B	PROT
0006	MTZJ33A	VC VOLTGE REGULATION
0007	MTZJ3.9B	PLOT RESET
0009	MTZJ5.6B	CLIPPING SYNC LEVEL
0010	MTZJ6.2B	PROT
0011	MTZJ6.2B	PROT
0012	ISS133	PROT
0013	MTZJ6.8C	PROT
0271	MTZJ13B	VOLTAGE DETECT
0272	ISS133	DECOUPING MUTE AUDIO
0501	ISS133	START
0504	GP080	V PULSE OUT
0506	0A204K	CURRENT (KV-C25510 ONLY)
0508	ISS133	CANEL +BLK LEVEL
0509	ISS133	V LIN
0511	GP080	PROT
0512	GP080	PROT
0513	MTZJ4.7B	PROT
0514	ISS133	PROT (KV-C29510 ONLY)
0515	ISS133	PROT (KV-C29510 ONLY)
0601	04SB60L-F	AC RECT
0602	RGP10G	REF RECT
0603	GP080	SMPS DRIVE 1
0604	GP080	SMPS DRIVE 2
0605	GP080	SMPS DRIVE 3
0606	RGP10G	+12V RECT
0607	RGP10G	REF RECT
0608	ERC25-06S	PLUSE CLIPPER
0609	MTZJ33A	FAST ON/OFF-1
0610	CTU-12S	+14V RECT
0611	ER029-08J	+135V RECT
0612	CTU-12S	+7V RECT
0613	RGP15J	AF V RECT-1
0614	RGP15J	AF V RECT-2
0616	MTZJ6.2B	+12V REF
0617	ISS133	PRIT
0618	MTZJ5.6B	+12V REF
0619	MTZJ33A	FAST ON/OFF-2
0620	0A204K	+12V REF
0621	MTZJ33A	FAST ON/OFF-3
0622	ISS133	PROT
0623	ISS133	DECOUPING STBY
0624	ISS133	DECOUPING STBY
0630	MTZJ15A	+12V REF
0801	RGP10G	+27V RECT
0802	RGP10G	+200V RECT
0803	RGP02-17	G2 RECT
0804	GP080	H CENTER-1
0805	GP080	H CENTER-2
0806	ERC06-1SS	H DAMPER-1
0807	ERC06-1SS	H DAMPER-2
0808	ER029-08J	PIN DAMPER

## • WAVEFORMS D BOARD



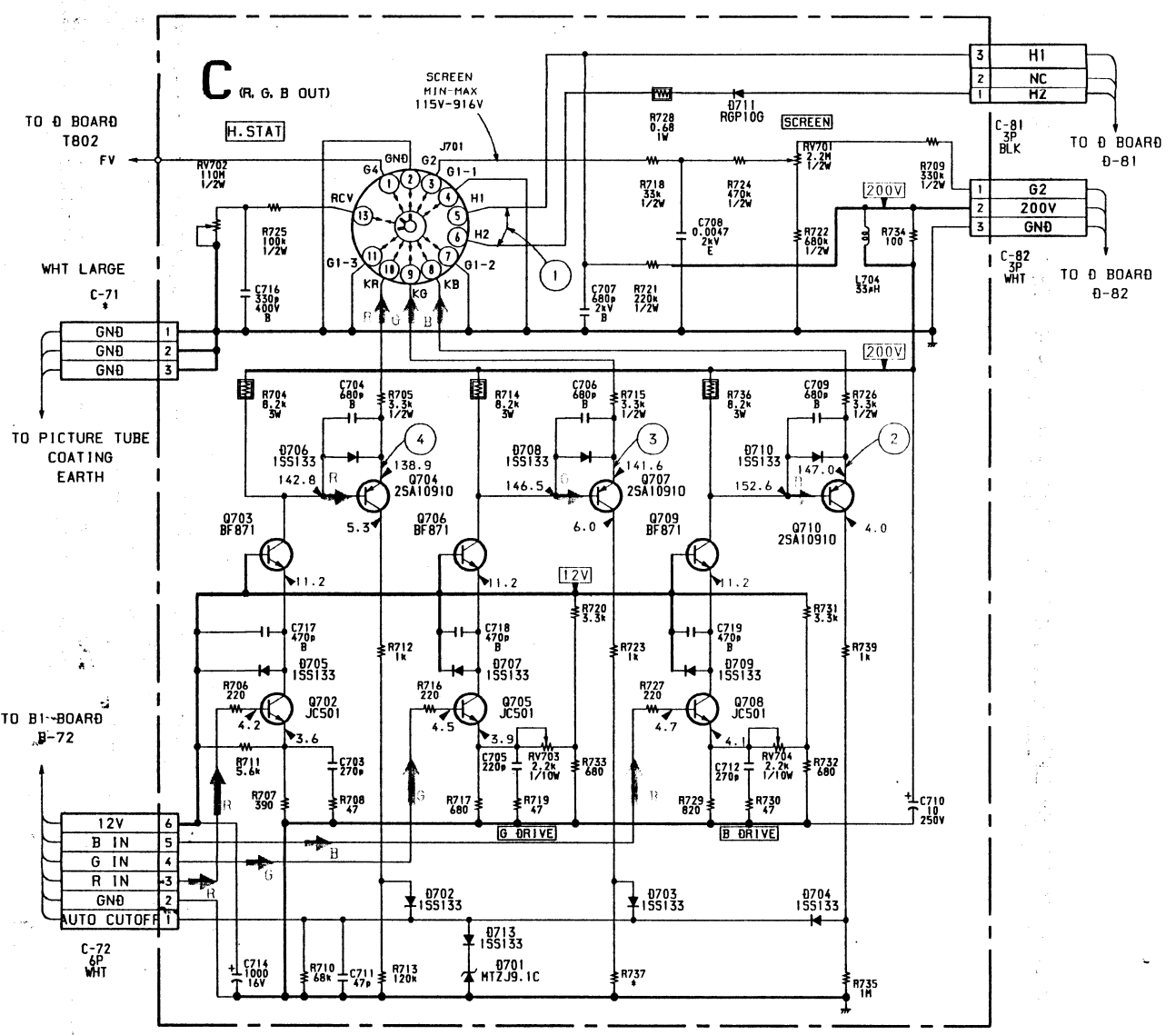
## • D BOARD

## \* MARK

KV-C25510	KV-C29510
C519 0.47	C519 0.33
C815 1	C815 0.82
C817 0.015	C817 0.017
C821 680p 2kV	C821 470p 2kV
0506 0A204K	0506
0514 JW	0514 ISS133
0515	0515 ISS133
0-88	0-88 3P
JW202	JW202 X
JW203 X	JW203
JW204 X	JW204
JW205	JW205 X
JW206 X	JW206
JW207 X	JW207
JW216 X	JW216
JW229 X	JW229
L801	L801 3.9mH
R525 1k	R525
R561	R561 270k
R570	R570 680
R607 4.7k	R607 5.6k
R812 68k	R812 51k
R5503 4.7	R5503 10
R5506	R5506 12K

— NOT MOUNTED  
X TO BE MOUNTED

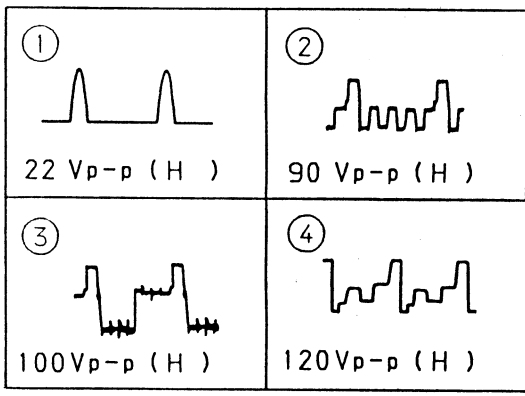
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P



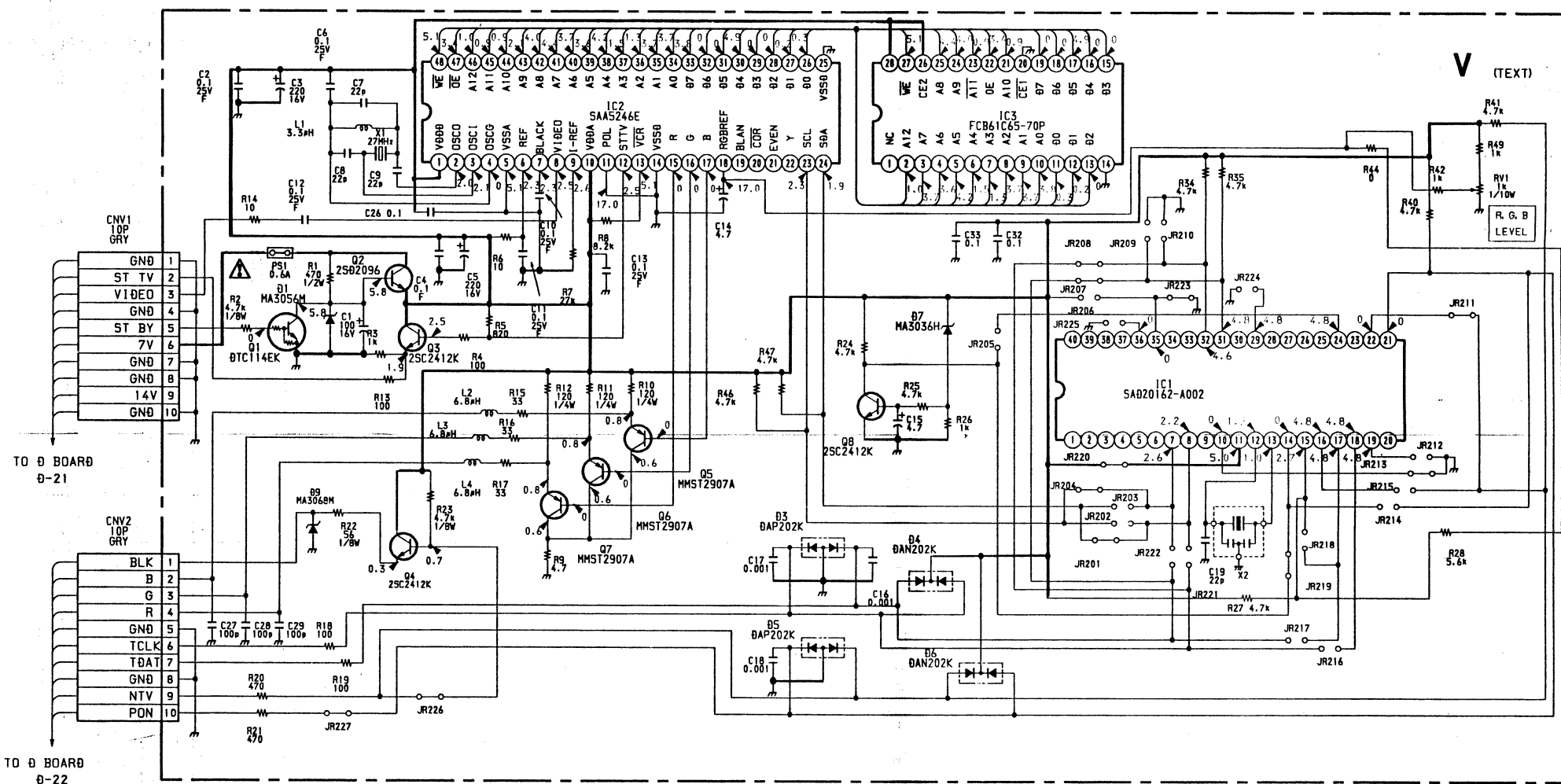
• C BOARD

Q702	JC501	R OUT
Q703	BF871	R OUT
Q704	2SA10910	ACO MEASURING
Q705	JC501	G DRIVE
Q706	BF871	G OUT
Q707	2SA10910	ACO MEASURING
Q708	JC501	B DRIVE
Q709	BF871	B OUT
Q710	2SA10910	ACO MEASURING
D701	MTZJ9.1C	PROTECT
D702	ISS133	PROTECT
D703	ISS133	PROTECT
D704	ISS133	PROTECT
D705	ISS133	PROTECT
D706	ISS133	PROTECT
D707	ISS133	PROTECT
D708	ISS133	PROTECT
D709	ISS133	PROTECT
D710	ISS133	PROTECT
D711	RGP10G	HEATING VOLTAGE REC
D713	ISS133	PROTECT

• WAVEFORMS C BOARD



• C BOARD  
\* HAR  
KV-C  
C-71  
R737



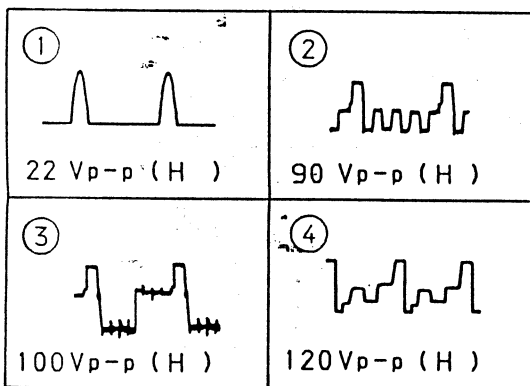
• V BOARD

IC1	S0A20162-A002	MICRO-CONT
IC2	SAAS246E	IVT
IC3	FCB61C65-70P	STATIC-RAM
Q1	0TC114EK	STAND BY
Q2	2S02096	SV REG
Q3	2SC2412K	SYNC BUFFER
Q4	2SC2712K	BLK OUT
Q5	MMST2907A	B OUT
Q6	MMST2907A	G OUT
Q7	MMST2907A	R OUT
Q8	2SC2412K	PON SW
Q1	MA3056M	SV REG
Q3	0AP202K	PROTECT
Q4	0AN202K	PROTECT
Q5	0AP202K	PROTECT
Q6	0AN202K	PROTECT
Q7	MA3036H	PROTECT
Q9	MA3068M	PROTECT

## • C BOARD

Q702	JC501	R DRIVE
Q703	BF871	R OUT
Q704	2SA10910	ACO MEASURING
Q705	JC501	G DRIVE
Q706	BF871	G OUT
Q707	2SA10910	ACO MEASURING
Q708	JC501	B DRIVE
Q709	BF871	B OUT
Q710	2SA10910	ACO MEASURING
Ø701	MTZJ9.1C	PROTECT
Ø702	ISS133	PROTECT
Ø703	ISS133	PROTECT
Ø704	ISS133	PROTECT
Ø705	ISS133	PROTECT
Ø706	ISS133	PROTECT
Ø707	ISS133	PROTECT
Ø708	ISS133	PROTECT
Ø709	ISS133	PROTECT
Ø710	ISS133	PROTECT
Ø711	RGP10G	HEATING VOLTAGE REC
Ø713	ISS133	PROTECT

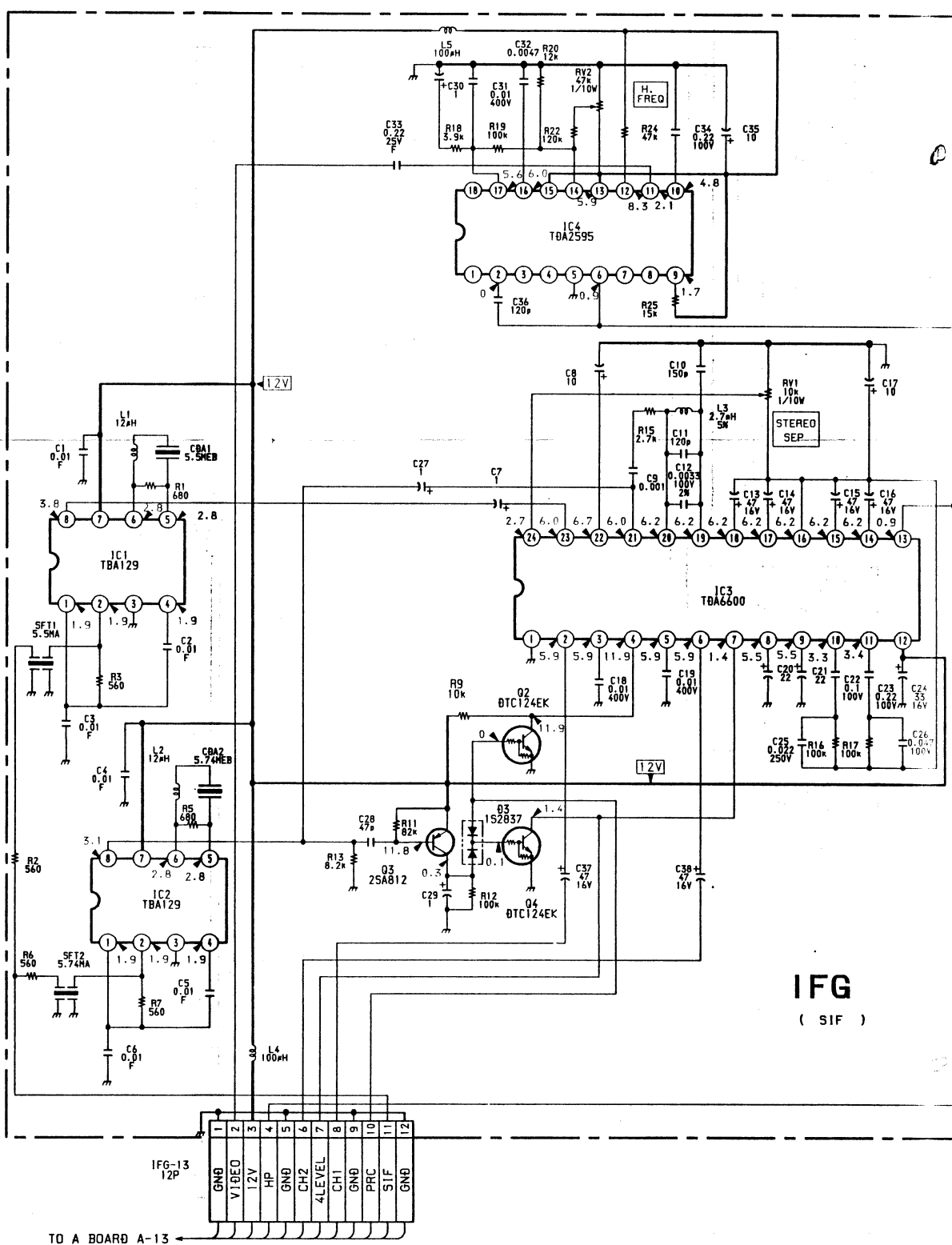
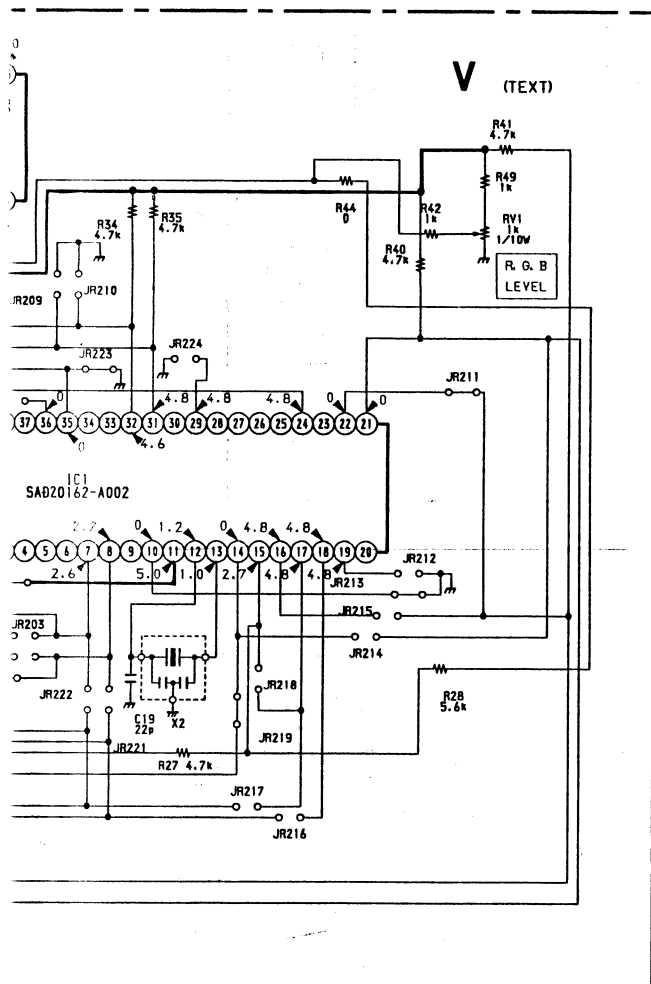
## • WAVEFORMS \* C BOARD



## • C BOARD

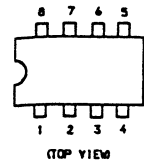
\* MARK

KV-C2551Ø	KV-C2951Ø
C-71 2P	C-71 3P
R737 820k	R737 470k

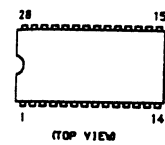




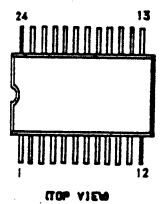
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RC4558P  
SDA2546  
TBA129  
TEA2014A  
TEA2031A



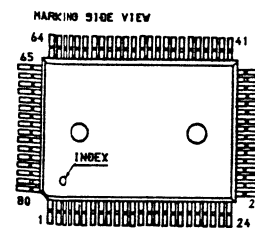
CXA1114P  
SDA20162-A002  
TDA4580-V6  
TDA6200  
TEA2028B



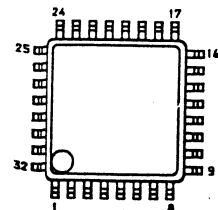
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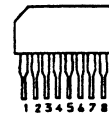
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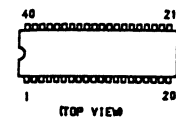
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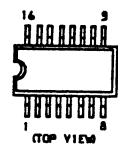
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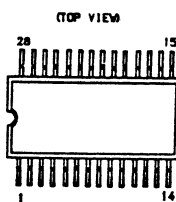
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SDA20560-A006



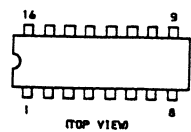
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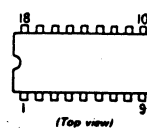
MB40968PF



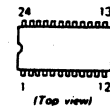
MC14053BCP  
PCF8574  
TC4051BPHB  
TDA4660T  
TDA8442-N3  
TEA2260



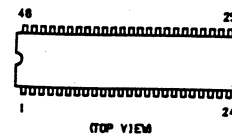
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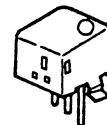
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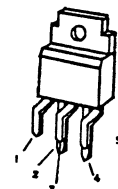
SAA5246PE



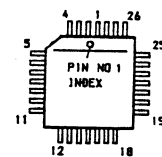
SBX1610-11



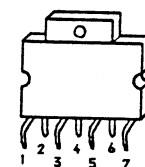
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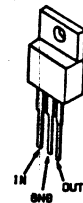
TDA4650WP



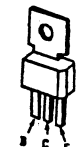
TDA8170



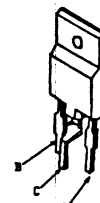
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TYA7812CT  
μPC24M05HF



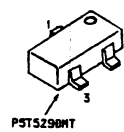
BF871



BU508AS1H  
2SD1548-LB



DTA144EK  
DTC114EK  
DTC124EK  
DTC144EK  
2SA1162G  
2SB1295-UL6  
2SC2412K-R



DTC144ES



2SA1091-0



2SA1220A-P  
2SC2688-LK



2SB734-34  
2SD774-34



2SC2785-HFE



2SD789-34



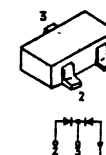
2SD2096-EF



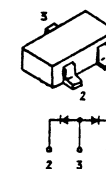
CTU-12S



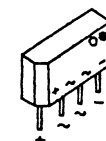
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DAN212K  
MA152WK



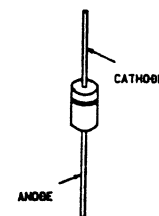
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EGP20G



D4SB60L-F



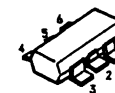
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RU-3AM



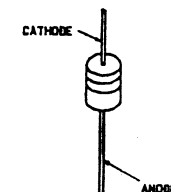
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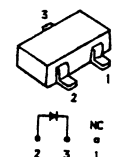
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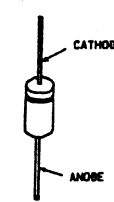
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MTZJ-15A  
MTZJ-3.9B  
MTZJ-33A  
MTZJ-36D  
MTZJ-6.2B  
MTZN-10C  
RD5.6ESB2  
RD6.8ESB2  
RD9.1ESB3  
UZ-4.7BSC  
1SS119



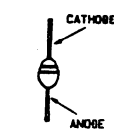
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RD3.6M-B2  
RD5.6M-B2  
RD6.8M-B2



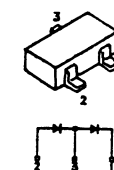
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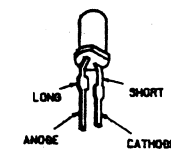
U05G



1SS226



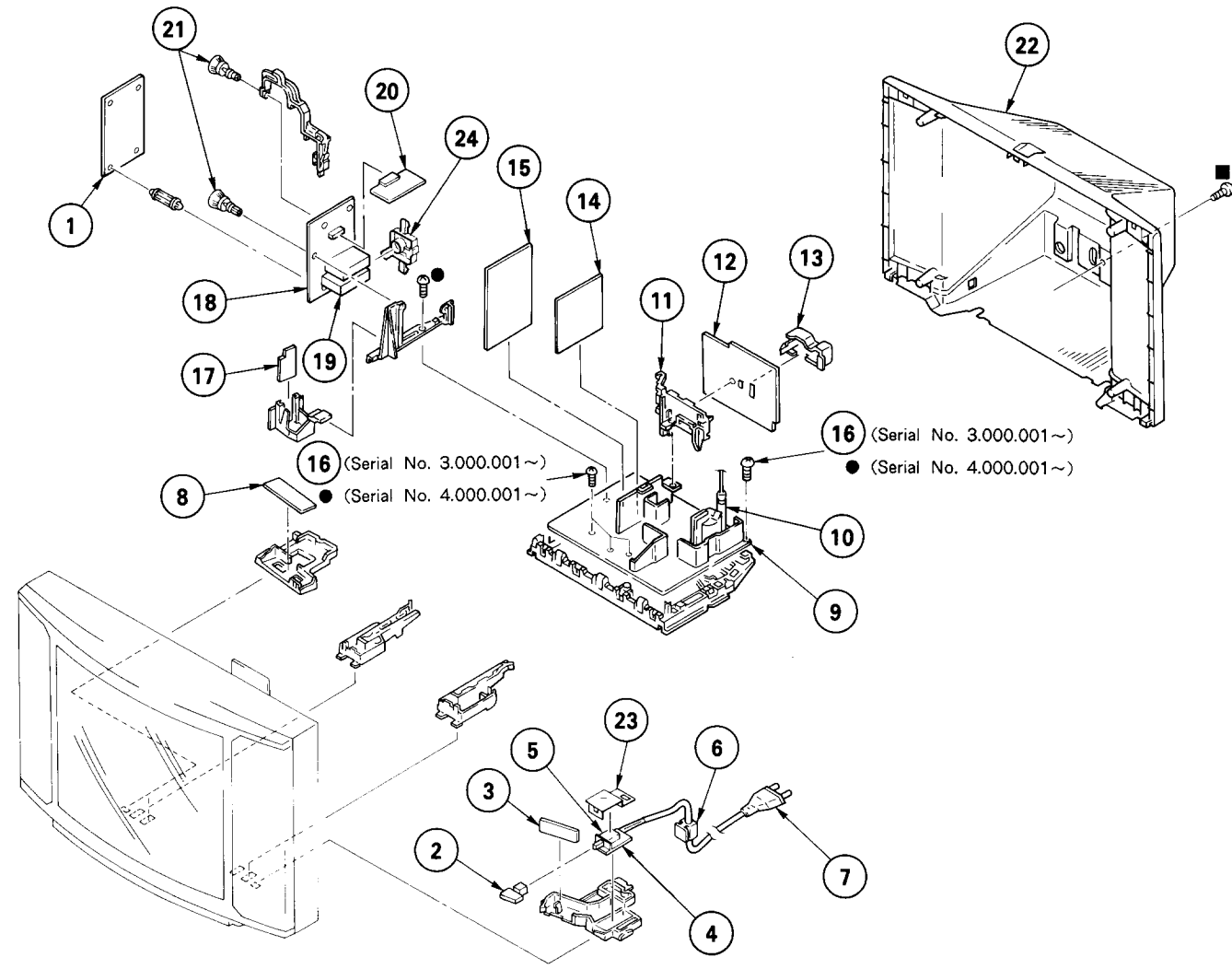
LD-201VR



# 6-1. CHASSIS (KV-C2553E ONLY)

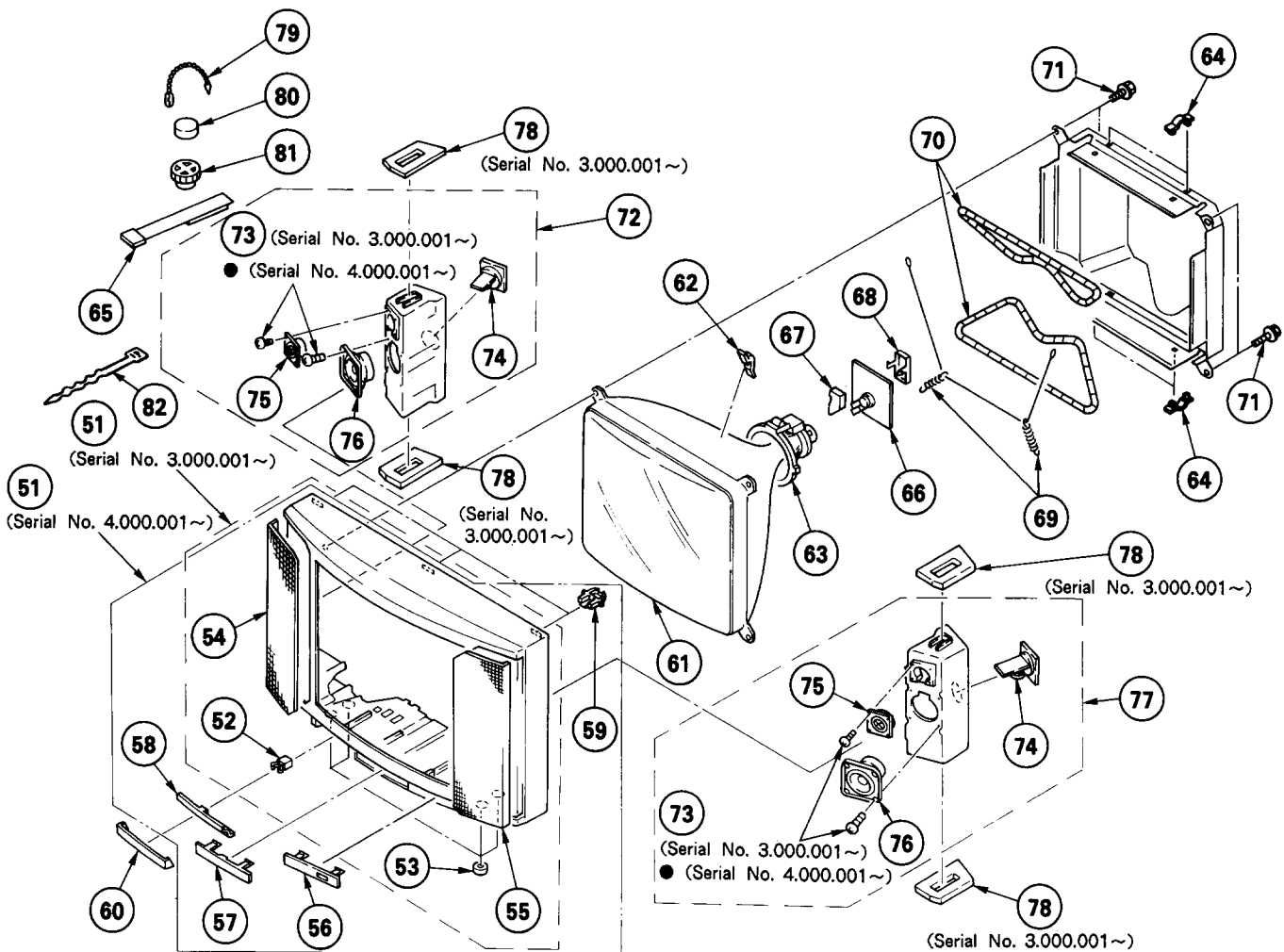
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■ : BVTP 4×16 7-685-663-79



# 6-2. PICTURE TUBE (KV-C2553E ONLY)

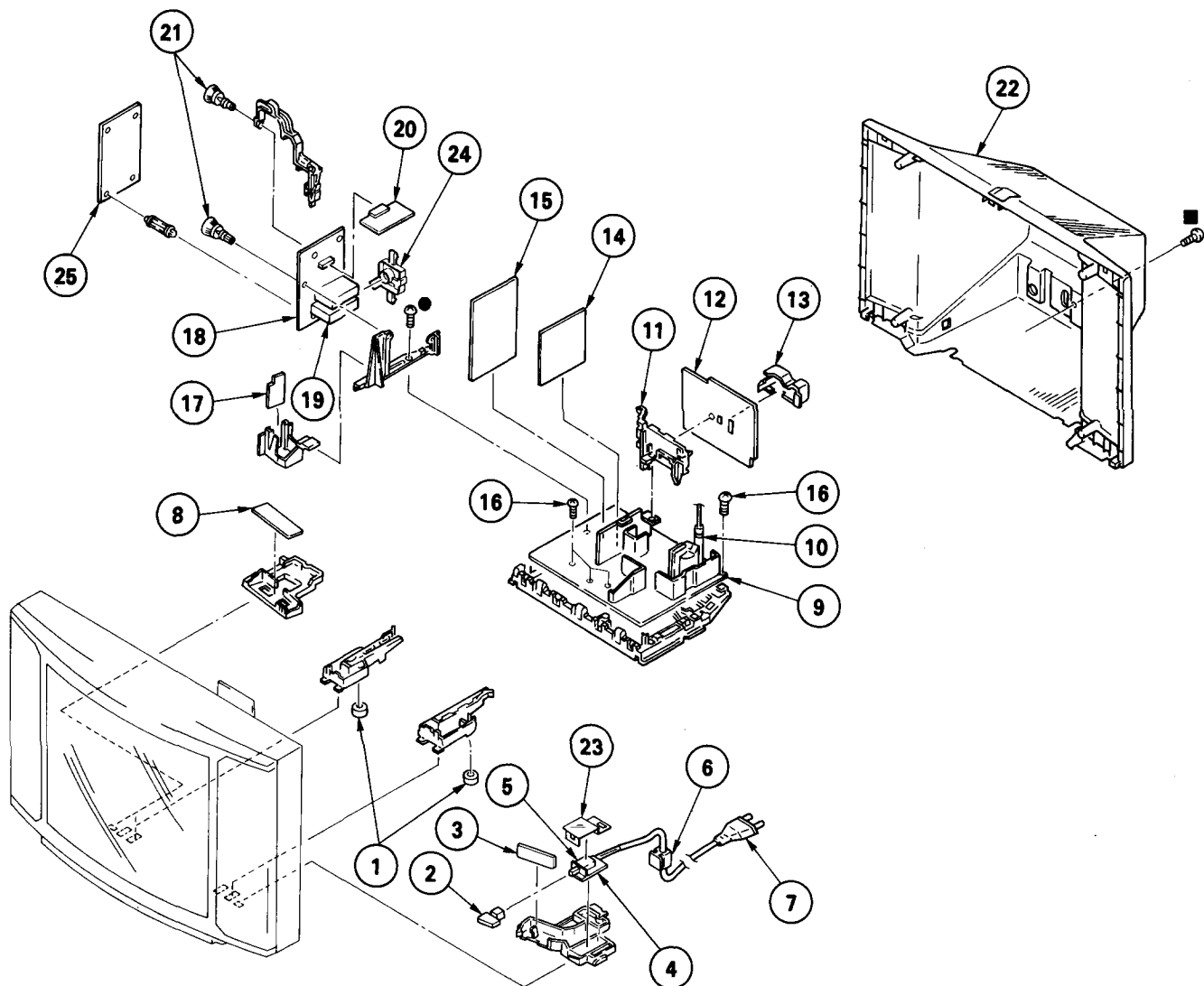
● : BVTP 3×12 7-685-648-79



### 6-3. CHASSIS (KV-C2953E ONLY)

● : BVTP 3×12 7-685-648-79

■ : BVTP 4×16 7-685-663-79





# 6-4. PICTURE TUBE (KV-C2953E ONLY)

